

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2266.—VOL. XLIX.

LONDON, SATURDAY, JANUARY 25, 1879.

[WITH SUPPLEMENT.] {PRICE ..... SIXPENCE.  
PER ANNUM, BY POST, £1 4s.

**MR. JAMES H. CROFTS, STOCK AND SHARE BROKER**  
AND MINING SHARE DEALER.  
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.  
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of Mining Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.  
Business negotiated in Stocks and Shares not having a general market value.

ACCOUNTS OPENED FOR THE FORTNIGHTLY SETTLEMENT  
Daily Price List, issued at 5 P.M., giving latest quotations up to close of market, and every Friday a general list containing closing prices of the week. MINES INSPECTED.

BANKERS: CITY BANK, LONDON; SOUTH CORNWALL BANK, ST. AUUSTELL.

SPECIAL DEALINGS in the following, or parts:—  
25 Penstruthal, 4s.  
20 Flagstaff, 5s.  
15 Chapel House, 23½.  
20 Chontales, 12s. 6d.  
30 Colorado, 31s. 3d.  
10 D'Eresby Consols.  
10 East Van, 21½.  
20 Eberhardt, 23 18s. 9d.  
25 Penstruthal, 4s.  
43 Pestarena, 4s. 6d.  
30 Parys Mount, 5s.  
10 Roman Grav., 26½.  
50 Rookhope, 5s.  
10 Tankerville, 22½.  
25 West Chiverton.

SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

RAILWAYS—SPECIAL BUSINESS.  
FOREIGN BONDS—SPECIAL BUSINESS.  
Fortnightly accounts opened on receipt of the usual cover.  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.  
ESTABLISHED 1842.

**MR. W. H. BUMPUS, STOCK AND SHARE BROKER,**  
AND MINING SHARE DEALER.  
44, THREADNEEDLE STREET, LONDON, E.C.  
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.  
RAILWAYS, BANKS, FOREIGN and COLONIAL BONDS, TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.  
Accounts opened for the Fortnightly Settlement.  
A Stock and Share List free on application.

MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—  
75 Almada, 4s. 6d.  
100 Birdseye Creek, 13s. 6d.  
100 Blue Tent, 35s.  
100 Chontales, 12s. 6d.  
30 Cape Copper, 230½.  
20 Colorado, 29½.  
100 Chingol (Silver).  
100 Don Pedro, 20s. 6d.  
10 Devon Consols.  
10 Dolcoath, 23½.  
10 East Caradon, 3s. 6d.  
10 East Pool, 28½.  
10 East Van, 28½.  
10 Eberhardt, 24 1s. 3d.  
100 Exchequer, 4s. 3d.  
25 Frontino, 22 6s. 3d.  
75 Glenroy, 10s.  
100 Great Laxey, 216½.  
100 Gold Run.  
15 Grogwinion, 41s.  
100 Hultafall.  
100 I.X.L., 4s. 3d.  
70 Javali, 6s. 6d.  
50 Kapanga, 9s. 6d.  
40 Llanrwst.  
30 Leadhills, 41s. 6d.  
60 Last Chance, 11s. 6d.  
5 Miners.  
50 Marke Valley, 11s.  
20 Mellanear, 24 3s. 9d.  
40 New Quebrada, 31s. 6d.  
100 Parys Mount, 5s. 3d.  
60 Penstruthal, 3s. 6d.  
15 Pandora, 9s. 9d.  
75 Pestarena, 3s. 9d.  
10 Port Phillip, 11s. 3d.  
10 Pateley Bridge, 21s.  
15 Roman Grav., 26½.  
20 Richmond, 29½.  
5 So. Condur, 210 18 9  
10 Tankerville, 22½.  
5 Van, 216½.  
30 Wh. Grenville, 22½.  
15 Wh. Peccor, 26½.

CHAPEL HOUSE COLLIERY.—FOR SALE, FIFTY SHARES (25 each, fully paid), at 22 11s. 3d. per share for cash.

\* DON PEDRO.—These shares continue very firm at 19s. to 21s., and a further rise appears imminent. Intending purchasers will do well to act at once.

IMPORTANT.—Owing to the general depreciation which has taken place during the past few months, many really SOUND STOCKS and SHARES may now be secured on very advantageous terms. Investors should, therefore, embrace the present favourable opportunity of purchasing before the inevitable reaction sets in.

A complete "List of Investments" for the present month (containing latest prices and a large amount of useful information) may be obtained free on application to Mr. BUMPUS.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

WILLIAM HENRY BUMPUS, SWORN BROKER.

Offices: 44, Threadneedle Street, London, E.C.

BANKERS—THE NATIONAL PROVINCIAL BANK OF ENGLAND, E.C.

**MESSRS. JONES AND HOUSTON, 25, CROSBY HALL**  
CHAMBERS, LONDON, E.C.

DON PEDRO NORTH DEL REY.—The rich stores from which they returned such fabulous profits some years ago have now been drained; the lode has also been intersected very rich at a quarter depth. The large and rapidly increasing returns, the great and important fresh discoveries of gold, can hardly fail to cause a quick advance in the value of these shares, and they will probably touch their old price again—25 each.

RHYDALUN Shares will likely follow in the same wake. The mine is only in its infancy, and making a profit of about £250 monthly.  
Bankers: London and Provincial.

**MR. E. J. BARTLETT, BRITISH AND FOREIGN STOCK**  
AND SHARE DEALER,  
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Post free, One Shilling, Eleventh Edition,  
"HOW TO INVEST"  
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Mr. THOMPSON transacts business in every species of Stock Exchange and Mining securities.  
Mr. THOMPSON affords reliable information to investors, and can give, when desired, a list of first-class Stocks and Shares, yielding 4 to 10 per cent. dividends upon present prices.—Mr. THOMPSON'S weekly Circular may be had on application.

**A B B O T T A N D C O.,**  
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**MR. GEORGE BUDGE, STOCK AND SHARE DEALER**  
9, GRACECHURCH STREET, LONDON, E.C. (Established 26 years).  
ALL BUSINESS TRANSACTED FREE OF ANY CHARGE FOR COMMISSION.

Notice to Investors and Speculators.

Mr. BUDGE has SPECIAL BUSINESS in—  
15 Blue Hill, 12s. 6d.  
100 Bodidris.  
100 Cambrian.  
20 Chapel House, 23½.  
30 Cakemore.  
3 D'Eresby Cons., 27½.  
115 Don Pedro, 20s. 9d.  
10 Devonport and Tiverton Brewery.  
2 Dolcoath, 23½.  
10 East Caradon, 3s.  
100 Exchequer, 4s.  
20 Grogwinion, 22½.  
40 Glenroy, 10s. 6d.  
110 Gold Run, 5s. 6d.  
50 Gawn.  
70 Llanrwst.  
100 Last Chance, 9s.  
5 Miners, 29½.  
50 Marke Valley, 11s.  
35 New Zealand Kapan.  
50 Prince Patrick.  
100 Parys Mount, 5s. 6d.  
200 Penstruthal, 4s.  
90 Prince of Wales.  
35 Penhalls, 25s. 6d.  
75 Pestarena, 3s. 9d.  
40 Red Rook.  
150 Rossa Grande, 2s.  
20 Tankerville, 22½.  
100 Tamar Silver-lead and Fluor-spar.  
10 Van, 217½.  
20 W. Wye Valley.  
70 Wheel Crebor.  
80 Wheel Uny, 10s.

BUYERS or SELLERS of any of the above, or holders of any Stocks or Shares readily marketable, will do well to apply to Mr. BUDGE.

SPECIAL BUSINESS in Frongoch shares as Buyer or Seller.

**BRITISH AND FOREIGN MINES.**

SHAREHOLDERS and INVESTORS desirous of PURCHASING or SELLING SHARES in COPPER, TIN, LEAD, GOLD, or SILVER MINES can do so at market prices, and obtain information regarding the same on personal application, or by letter, of—

MESSRS. PETER WATSON AND CO.,  
54, OLD BROAD STREET, LONDON, E.C.  
Telegraphic Messages punctually attended to.

**MR. ALFRED E. COOKE,**  
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ESTABLISHED 1853.

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[Established 1848.]  
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Don Pedro. Llanrwst. Sierra Buttes.  
Eberhardt. Port Phillip. St. Harmon.  
Gold Run. Pestarena. Wye Valley.

"THE WEEK."—A SEPARATE EDITION from that which appears in the Mining Journal is published every Wednesday evening, containing "Notes and Hints on the Stock Markets," with Closing Prices. May be had on application.  
Bankers: London and Westminster, Lothbury.

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SPECIAL BUSINESS in the following:—  
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East Van. Hultafall. Roman Gravels.  
Glyn. Lead Era. South Condurrow.  
Grosedd and Merilyn. Llanrwst. Tankerville.  
Great Holway. Mynydd Gorrdu. Wheel Uny.

\* Good to buy for a quick rise.  
**MESSRS. ENDEAN AND CO., 85, GRACECHURCH STREET**  
LONDON, E.C. STOCK AND SHARE DEALERS.  
Established in 1861.

Bankers: Barclay, Bevan, and Co.; and London and Westminster Bank, Lothbury.

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Established Twenty Years.

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MINING ENGINEERS AND INSPECTORS,  
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Have Agents in England, Scotland, Wales, and on the Continent.

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Buyers or Sellers of Mine Shares, Railways, Foreign Bonds, and Miscellaneous descriptions of Stock and Shares may send their orders, and have their business promptly attended to for immediate cash, or the fortnightly account current, or for a deferred settlement.

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**MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,**  
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can sell the following SHARES, at prices annexed:—  
100 Aberdaunt. 10 Frontino, 22 6s. 3d. 50 Port Phillip, 10s. 3d.  
20 Bodidris. 20 Flagstaff, 5s. 20 Pateley Bridge, 21s.  
50 Cambrian, 21 12s. 6d. 25 Last Chance, 9s. 6d. 100 Penstruthal, 3s. 6d.  
30 Colorado, 21 11s. 20 Leadhills, 22½. 20 Richmond, 29 12s. 6d.  
50 Cakemore Col., 23 11s. 60 Javali, 6s. 3d. 40 Rookhope, 5s.  
50 Chontales, 11s. 3d. 10 Llanrwst. 10 Rossa Grande, 1s. 6d.  
40 Don Pedro, 21 2s. 3d. 10 Mynydd Gorrdu, 45s. 100 So. Roman Grav., 3s.  
20 East Van, 21½. 50 N. Zee Kap., 11s. 15s. 25 Tyn-y-Fron.  
100 Eberhardt, 24 3s. 6d. 85 N. Quebrada, 21 15s. 10 W. Chiverton, 12s. 6d.  
100 Exchequer, 4s. 10 Pant-y-Mwyn, 23 5s. 50 Wh. Crebor (off. wd.).  
20 East Caradon, 4s. 200 Pestarena, 3s. 6d. 100 York Penin., 3s. 9d.

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Shares bought and sold at net prices. Telegrams promptly attended to.

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**MR. JOHN L. M. FRASER**  
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Investigations, Reports, and Valuations made of Coal, Iron, Slate, Pyrites, and other properties at home and abroad. Enquiries for Road and Railway Materials, Mining Plant, Pipes, Castings, &c. Plans, &c. of the most modern and economical mining appliances, fittings, and arrangements.

I have been long acquainted with the principal Coal and Ironworks in the North, with the Slate Quarries in North Wales, and for many years was Chief Engineer of the Tarsia Mines, Works, and Railway in Spain.

**MR. CHARLES THOMAS,**  
MINING AGENT, STOCK AND SHARE DEALER,  
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**MR. ALFRED THOMAS,**  
MINING AGENT, AND STOCK AND SHARE DEALER,  
10, COLEMAN STREET, LONDON, E.C.

"INVESTMENTS AND SPECULATIONS" for 1879.  
Price Sixpence.

**MR. EDWARD ASHMEAD, 62, CORNHILL, LONDON,**  
LONDON MINE AGENT, ACCOUNTANT, AND AUDITOR.

FOR SALE, the WHOLE or PART:—  
30 Goredale and Mer- 100 Morfa Du, 16s. 100 Santa Barbara, 21 12 6  
lyn, 23½. 100 Cwm Bryno, 2s. 2 Rhydalari, 241.  
50 Hultafall, 23½. 50 Frongoch, 23½. 20 Great Holway, 24.  
15 Hornachos (off. wtd.) 100 Bettws-y-Coed, 21½.  
Bankers: London and Provincial.  
Address, H. WILKINS and Co., 3, Heybourne Villas, Tottenham.

TO SHAREHOLDERS AND OTHERS.

**LLANRWST LEAD MINE (LIMITED).**  
FOR SALE, ONE HUNDRED SHARES, in ONE LOT, for  
£110, or a little less might be accepted if AN OFFER WERE MADE.  
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FOR SALE (£3 paid), ONE HUNDRED AND TWENTY-FIVE  
SHARES in ARENDAL MINING AND SMELTING COMPANY  
(LIMITED). No reasonable offer refused.  
Apply to Mr. JOHN DAW, Amdal Mines, Skien, Norway.

**THE SECRETARY of a COAL COMPANY (LIMITED), in the**  
NORTH, is open to RECEIVE a YOUNG GENTLEMAN INTO HIS  
OFFICE, where a THOROUGH KNOWLEDGE of the COMMERCIAL MAN-  
AGEMENT of a LARGE COLLIERY may be acquired. Premium required.  
Address, "A. I," care of Mr. Huntley, Express Office, 205, High-street, Sun-  
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**ENGINEER WANTED.—REQUIRED, by a Gold Mining**  
Company abroad, an EXPERIENCED ENGINEER to WORK the  
ENGINE and the MACHINERY generally, and capable of REPAIRING and  
KEEPING in ORDER the MACHINERY and BOILERS, &c.  
Address, by letter only, with references, also stating age and salary required,  
"A. B.," care of Messrs. Kensington and Co., 11, Clement's-lane, London, E.C.

**JUNIOR PARTNERSHIP WANTED, by a Gentleman**  
accustomed to ALL BRANCHES of the MINING PROFESSION. Was  
articled to the first Mining Engineer in this country. Can undertake the whole  
or part of the work.  
Apply, by letter, to "Rex," Apsley House, 119, Lansdowne-road, Notting Hill,  
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**WANTED, a SITUATION as AGENT in METALLIFEROUS**  
MINES at home or abroad. Have had ten years foreign experience.  
At present engaged in Lead Mines, North of England. Practically acquainted  
with Machine Drills, Electric Blasting, &c., also Surveying. Have Manager's Cer-  
tificate of Competency (Coal). Testimonials and references to present employers.  
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TO CAPITALISTS, INVESTORS, OR PROJECTORS.

**A GENTLEMAN from abroad (making a limited stay in London)**  
is desirous of SECURING the CO-OPERATION of those having the com-  
mand of CAPITAL in an enterprise of STEELING WORTH and PROMISE.  
Address, "A. L.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

**A F.G.S. and CONSULTING MINING ENGINEER, in the**  
West of England, whose Pupils have all passed well, is PREPARED to  
INSTRUCT CANDIDATES for the forthcoming JULY EXAMINATIONS.  
Apply for terms to "F.G.S.," MINING JOURNAL Office, 26, Fleet-street, E.C.

**MINING AGENT OPEN TO A RE-ENGAGEMENT.**  
Has had considerable experience in METALLIC MINING in CORN-  
WALL and the NORTH OF ENGLAND; also 15 years on the Continent. Speaks  
English, French, German, and Spanish, and has had charge of mines for many  
years. Practically acquainted with the most modern dressing apparatus, the  
most economical pumping and winding engines, boring machines, smelting, and  
general steam and water appliances. Inspections undertaken; plans of mines  
and assays carefully executed. Unexceptionable references.  
Address, Mr. NANCE, 22, Stanley-street West, North Shields, Northumberland.

**PUBLIC COMPANIES OFFICES RENT FREE.—**  
Books kept by experienced Clerks at a small cost.  
Apply to Mr. E. HOWELL, 10, Bush-lane, London, E.C.

**THE PORT PHILLIP AND COLONIAL GOLD MINING**  
COMPANY (LIMITED).

Incorporated by Royal Charter, and under the Companies Acts of 1862 and 1867.

Notice is hereby given, that the ORDINARY GENERAL MEETING of the  
Shareholders of this company will be HELD at the Cannon street Terminus Hotel,  
Cannon-street, in the City of London, on THURSDAY, the 30th day of January,  
1879, at One o'clock in the afternoon precisely, for the following purposes:—  
To receive and consider a report of the proceedings of the company and a state-  
ment of the accounts since the last Ordinary General Meeting.  
To elect directors in the place of Messrs. Alfred Cobbett and Rivett Henry  
Bland, who retire by rotation, and offer themselves for re-election.  
To elect auditors for the ensuing year.

By Order, J. W. PURCHASE, Secretary.  
Offices: 57, Moorgate-street, London, E.C., 16th January, 1879.

N.B.—The Transfer Books of the company will be closed from Wednesday, the  
29th January, until Thursday, the 13th February, both days inclusive.

**VICTORIA (LONDON) MINING COMPANY**  
(LIMITED).

Notice is hereby given, that the ORDINARY GENERAL MEETING of the  
shareholders of this company will be HELD at the Cannon street Terminus Hotel,  
Cannon-street, in the City of London, on THURSDAY, the 30th day of January,  
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Bland, who retire by rotation, and offer themselves for re-election.  
To elect auditors for the ensuing year.

By Order, J. W. PURCHASE, Secretary.  
Offices: 57, Moorgate-street, E.C., 16th January, 1879.

N.B.—The Transfer Books of the company will be closed from Wednesday, the  
9th January, until Thursday, the 13th February, both days inclusive.

**MR. WILLIAM BREDEMAYER, MINING, CONSULTING**  
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AND IDAHO. NOTARY PUBLIC.

Geological examinations; reports on mining properties; surveys mines, rail-  
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STRAND STREET, LIVERPOOL.

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GOLD AND SILVER MEDALS AWARDED for Steam-Engines & Boilers, also the Special Steam Pump, with Holman's Condenser & Compound Pumping Engine.



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HYDRAULIC AND GENERAL ENGINEERS,

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AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

The "SPECIAL" DIRECT-ACTING STEAM PUMP,

Holman's Patent Self-acting Exhaust Steam Condensers.

UPWARDS OF 12,000 "SPECIAL" STEAM PUMPS ARE IN USE.

After eight years of successful application for all purposes to which steam-driven pumps can be applied, THE "SPECIAL" STEAM PUMP STILL MAINTAINS THE FIRST POSITION IN THE MARKET, notwithstanding that it alone—of all direct-acting pumps—has been subjected to the great variety of severe tests that must be encountered in such a period of time. Some valuable improvements have been suggested in the course of a long experience, and their adoption has rendered the apparatus at once the simplest and most certain in action. There is absolutely no extraneous gear, and the steam cylinder is no longer than the pump. The valves are of easy access, and are suited for pumping fluids and semi-fluids of almost any consistency.

Holman's Condenser

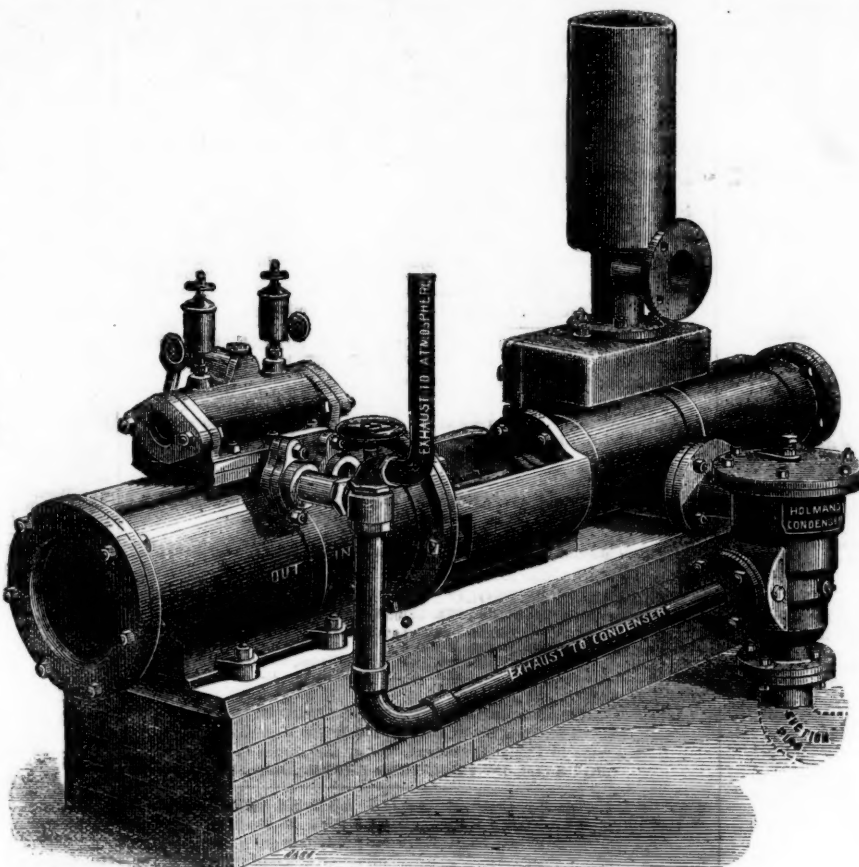
Turns waste steam into GREAT POWER.

SAVES HALF ITS COST IN PIPES AND CONNECTIONS.

PREVENTS ALL ESCAPE OF STEAM IN MINES OR ELSEWHERE.

REQUIRES NO EXTRA SPACE.

SAVES TWENTY TO FIFTY PER CENT. OF FUEL.



WILLIAM ELLIOT, Esq., of the Wearside Iron and Coal Company, writes under date Sept. 17th 1875, as follows:—"We have now THIRTY-FIVE of your SPECIAL STEAM PUMPS in operation at the various collieries under my charge—some of them employed pumping water out of our pits to the depth of 50 fms.—others employed in the pits, and a good many feeding Boilers. I have no hesitation in saying that we have found them the Cheapest and Best Pumps of the kind we have tried. I can with confidence recommend them to intending purchasers."

Messrs. BURT, BOULTON, and HAYWOOD, Chemical Manufacturers, of London, have FORTY of the "SPECIAL" STEAM PUMPS in use at their works.

HOLMAN'S CONDENSERS

Are made to suit any size and kind of Steam Pump. They form a part of the suction pipe of the Pump, and while they effectually condense the exhaust steam they produce an average vacuum of 10 lbs. per square inch on the steam piston, increasing the duty of the Engine and effecting a saving in fuel of from 20 to per cent.

In Mining operations these Condensers will be of great value.

All Boiler Feeders are recommended to be fitted with these Condensers, as not only is the exhaust steam utilised in heating the feed water, but is returned with it into the boiler.

GREAT REDUCTION IN PRICES.

The following sizes are suitable for low and medium lifts:—

Diameter of Steam Cylinder ...In.	3	4	4	4	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9	10	10
Diameter of Water Cylinder ...In.	1½	2	3	4	3	4	5	3	4	5	6	3	4	5	6	7	4	5	6	7	8	5	6	7	8	9	5	6
Length of Stroke ...In.	9	9	9	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	18	12	12	12	18	24	12	12
Gallons per hour	680	815	1830	3250	1830	3250	5070	1830	3250	5070	7330	1830	3250	5070	7330	9750	3250	5070	7330	9750	13,000	5070	7330	9750	13,000	16,500	5070	7330
Price of Special Pump ...£	16	18	20	25	22 10	27 10	32 10	25	30	35	40	30	35	40	45	50	40	45	50	55	65	50	55	60	70	85	55	60
Extra, if fitted with Holman's Condenser and Blow-through Valve	£7	£7	£9	£11	£8 10	£11 10s	£12 10s	£9	£12	£15	£15	£10	£13	£15	£16	£22	£13	£16	£16	£22	£22	£16	£16	£23	£24	£35	£17	£17

CONTINUED.

Diameter of Steam Cylinder..In.	10	10	10	10	12	12	12	12	12	12	14	14	14	14	14	14	16	16	16	16	16	18	18	18	18	18
Diameter of Water Cylinder..In	7	8	9	10	6	7	8	9	10	12	7	8	9	10	12	14	8	9	10	12	14	9	10	12	14	14
Length of Stroke .....In	12	18	24	24	18	18	18	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Gallons per hour .....	9750	13,000	16,519	20,000	7330	9750	13,000	16,519	20,000	30,000	9750	13,000	16,519	20,000	30,000	40,000	13,000	16,519	20,000	30,000	40,000	16,519	20,000	30,000	40,000	40,000
Price of Special Pump..£	65	75	90	100	75	80	85	110	120	140	110	120	130	140	160	180	140	150	160	180	200	180	190	210	230	230
Extra, if fitted with Holman's Condenser and Blow-through Valve	£23	£24	£35	£35	£20	£27	£27	£38	£38	£50	£28	£28	£40	£40	£55	£55	£28	£40	£40	£55	£55	£45	£45	£56	£60	£60

Intending purchasers of Steam Pumps would do well to observe the great length of stroke, short steam cylinder, and short piston of the "Special" Steam Pump, as compared with the short stroke, long steam cylinder, and long piston of the Pumps of other makers, as the efficiency and durability of the machine, and the space occupied by same, greatly depend upon this. The advantage of long strokes will be obvious when purchasers are reminded that each set of suction and delivery valves of a "Special" Steam Pump with 24 in. stroke, running at 120 ft. per minute, would open and close only 30 times per minute, as against 120 times per minute in a Pump with only 6 in. stroke performing same duty.

The "Special" Steam Pump can be worked by Compressed Air as well as by Steam.

HUNDREDS of these PUMPS are USED for HIGH LIFTS IN MINES, for which purpose they are made with 21, 24, 26, 28, 30, and 32-inch Steam Cylinders, and 36 48 and 72-inch Strokes.

The following Testimonial gives one Example of the Power Gained by the action of Holman's Patent Condensers:—

NORLEY COLLIERY, WIGAN.

Messrs. TANGYE BROTHERS AND HOLMAN.

GENTLEMEN,—I have great pleasure in recording my entire satisfaction with the working of the Holman's Patent Steam Pump Condenser which you have supplied to us. The complete condensation of the steam is, apart from its value in the strict economic sense, a most valuable feature in the drainage of underground work-

ings. The perfect manner in which this important result is accomplished by your Condenser is extremely creditable to you, and merits the thanks and commendation of the Mining Engineer. When we start the "Special" Steam Pump the Condenser commences working automatically, and maintains a constant vacuum of 10½ lbs. per square inch, even when we run the Pump upwards of 80 strokes (166 feet) per minute. It may perhaps be interesting to you to know that when we were running the Pump at 84 strokes (168 feet) per minute, the steam gauge

indicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump and the Condenser vacuum gauge on the exhaust pipe indicating a steady vacuum of 21½ inches, I turned the exhaust steam from the Condenser into the atmosphere, when the speed at once fell to 44 strokes per minute. The working economy thus shown is really so great that the cost of the Condenser must be saved in a very short time. (Signed) J. THOMPSON.

NORTH OF ENGLAND HOUSE ... TANGYE BROTHERS, ST. NICHOLAS BUILDINGS, NEWCASTLE-ON-TYNE.

SOUTH WALES HOUSE... TANGYE BROTHERS AND STEEL, Tredegar Place, NEWPORT. Mon.; and Exchange Buildings, SWANSEA



## Lectures on Practical Mining in Germany.

## CLAUSTHAL MINING SCHOOL NOTES.\*—No. CV.

BY J. CLARK JEFFERSON, A.R.S.M., WH. 8C.,  
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(Formerly Student at the Royal Bergakademie, Clausthal).  
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## SECTION V.

## KIND AND CHAUDRON'S SYSTEM OF BORING SHAFTS.

The object of this proceeding of Kind and Chaudron is to bore shafts through strata giving off great quantities of water, and in such a manner that it is not necessary to lay down the pumping arrangements until the shaft has been sunk and lined in a water-tight manner. The shaft is bored out under water, the tubbing lowered from the surface, and only after this has been done is the attempt made to pump out the water. It is evident that this method should only be adopted where there is any prospect of the tubbing being successfully placed in the shaft, for a consideration of this method of boring will show that the effect obtained by boring is much less than that of sinking in the ordinary method, and is only advisable, therefore, under the following circumstances:—

1. When the amount of water is so great as to render success by the ordinary method doubtful and also exceedingly expensive.
2. When the character of the rock is such that it will stand for some time without lining, indeed so long as is necessary for the insertion of the lining; and hence in the case of quicksand and the like this method is impracticable. It must here be noticed that as the water remains in the shaft the whole time there is no danger from currents of water flowing into an empty shaft, loosening the sides of the shaft and washing the strata into the shaft, the back pressure of the water materially helping to support the sides until the shaft is finished. This method of boring shafts consists of two distinct boring operations.—1. The boring in advance of a smaller shaft or bore hole, generally from 4 to 5 ft. in diameter.—2. The enlargement of this to the full diameter. In sinking the shafts at the Pironees the smaller shaft was kept 30 ft. in advance, and the sinking of this and its enlargement to the full width were prosecuted alternately 15 ft. at a time.

This proceeding, which was patented by Kind, was first tried at the Schönecken Pits, at Stringen, near Forbach, in the French department of the Moselle, in 1849. A 25-in. bore-hole had been previously sunk between Dec. 18, 1848 and Aug. 8, 1849, to a depth of 290 yards through the red variegated sandstone of the coal measures, and this bore-hole was afterwards taken as the centre for the shaft boring, and served partly as a guide for the apparatus. The sinking of the enlarged shaft to a depth of 350 ft. was completed (in 23 months) on July 11, 1851, the last 30 yards being bored through carboniferous sandstone. The shaft was bored 4.25 metres in diameter, the lining of the shaft was 3.50 metres in diameter, being 0.25 metre thick at the lower end and 0.15 metre thick at the upper end, the annular space thus left between the lining and the shaft being 0.125 metre broad at the lower and 0.225 metre broad at the upper end. The shaft at St. Vast was bored 4.25 metres diameter when completed, the smaller advanced shaft was 1.37 metre in diameter, the lining of the shaft 3.65 metres in diameter inside, the boring being prosecuted through a depth of 98 metres. The shaft at the Dahlbusch Colliery, near Gelsenkirchen, in Westphalia, was 4.4 metres in diameter when enlarged, the advanced bore-hole being 1.37 metre in diameter, and the lining of the shaft 3.65 metres in diameter, carried through a depth of 35 yards. The shaft of the King Leopold Colliery was 4.4 metres in diameter, the advanced bore-hole being 1.4 metre in diameter, the lining of the shaft, 3.5 metres in diameter, being carried to a depth of 113. The shafts at Meurichin are both 3.5 metres in diameter inside the lining, which was carried through depths of 230 ft. and 290 ft. respectively in the two shafts. The lining of the shaft at Escarpelle is likewise 3.50 metres in diameter, and carried to a depth of 340 ft. At the Rhine Elba Colliery, Glensenkirchen, the shaft is sunk to a depth of 290 ft., of 14 ft. diameter. More lately the diameters of the shafts sunk by this method have been much larger, as much as 15 ft. inside the lining.

The object of the advanced bore-hole is to form a receptacle for the debris formed during the boring or enlargement of the shaft to its full diameter, so that the large cutting tool will always be working on fresh clear ground. To facilitate the removal of the debris into the smaller bore-holes the bottom of the enlarged shaft is cut in a funnel shape, so as to give the loose stones a tendency to roll down the inclined bottom of the shaft into the advanced bore-hole or shaft. In order to effect this the cutting tool has a suitable form given to it, as will afterwards be described. The material which thus collects in the advanced bore-hole is removed from time to time as is found necessary.

The boring apparatus consists of the large and small cutters, the boring rods, and the connection between the cutters and the rods.

**CONSTRUCTION OF THE BORERS.**—The borer for the advanced bore-hole consists of two principal parts, an horizontal bar, and the frame carrying it. The horizontal bar is provided in its lower half with several slightly tapering conical holes, into which the cutters of steel or steely iron are fixed, and made fast with a taper pin. The cutters are placed with the knife edges lengthways along the bar; the extreme ends of the bar are made somewhat broader, and carry two cutters side by side, fixed parallel to the others. The object of having two cutters at the ends in the place of one is to equalise better the strain thrown onto the cutters, since a single cutter would not only have more ground to pass over during each rotation of the apparatus, but being next to the solid side is more likely to be worn and broken. By changing these end cutters the diameter of the advanced bore-hole may be varied by 9 inches. In some of the arrangements the end cutters were curved to correspond to the circumference of the bore-hole. The cutters are fixed so on the bar which carries them that by a complete revolution of the bar each cutter cuts a separate ring-shaped surface, which is nearly as broad as the cutter itself. To effect this the arrangement of the cutters is not symmetrical on both sides of the centre line of the apparatus. The cutter bar is carried by a short intermediate piece, consisting of a short vertical rod, having in its lower end two diverging arms, which terminate in forks, or slots, embracing the cutter bar. The upper end of the short vertical rod terminates in a screw, by means of which it is attached to the rest of the apparatus. On this rod, and bolted to it (just above where it is welded to the two diverging arms) is a cross bar at right angles to the cutter bar. This carries at its two ends two teeth or after cutters, formed to correspond to the curve of the bore hole, its object being (whilst serving as a guide) to remove any projections on the sides of the shaft or bore hole which may have been left by the boring cutters attached to the foot of the borer. Somewhat higher up on the rod are fixed two iron guides at right angles to each other, which serve to keep the boring tool in a vertical position. Each end of these guides is bent round in an horizontal direction, corresponding to the curvature of the sides of the shaft, which they touch. Each guide has in plan somewhat the form of the letter Z. The guides are not fixed rigidly to the rod, but can slide up or down the upper part of the rod; or, what is the same thing, should the guides become fixed the boring tool can slide in the sockets formed at the centre of the guides. The weight of this small cutting instrument varies from 5 to 7 tons.

The larger cutter is essentially the same tool as the smaller we have just described, with modifications in the construction due to its greater weight and dimensions, and the fact that it has only an annular or ring-shaped portion of ground to cut out. The cutter bar used at St. Vast, which is made of cast-steel, was 13 ft. 6 in. long by 10 in. deep, and 5½ in. thick. The two ends are made much broader, so as to carry four cutters each, for cutting the outermost

circle. Besides these the bar carries other ten cutters; the middle portion corresponding to the bore hole in advance carries no cutters. The under side of the bar between the separate cutters is V-shaped, so that the debris is readily pushed on one side as the bar falls. The separate cutters have a total length of 6½ inches. The length of the conical portion, which fits in the round socket holes of the bar, is 3½ inches, the cutters being about 5½ inches long, and so arranged in the cutter bar that each cuts a separate ring-shaped surface for itself, the ring-shaped surfaces forming the total area or the bottom of the bore shaft. The enlarged ends of the bar are about 10 in. deep, 4½ in. thick, and 19 in. in length, measured on the outer periphery. The cutters which are carried by this portion of the bearer project 1½ in. beyond the outer edge of the bearer or cutter bar, so that the shaft is bored 3 in. wider in diameter than the length of the cutting bar, and thus all liability of the bar sticking fast in the shaft is avoided. This arrangement thus provides for an effective fall of the apparatus, and prevents the teeth becoming wedged in any clefts which may occur at the bottom of the shaft.

The cutter bar is carried by three long arms, the two sides ones being attached to the bar near the ends, and the middle one to the centre of the bar, the lower ends of the arms being forked or slotted so as to embrace the bar, to which they are attached by means of gibs and cotters. The upper ends of the arms are attached in a similar manner to a cross head or flat plate, which terminates at the upper end in a round shaft rod. The arms are about 5 in. broad and 3 in. thick, which is increased to 7½ in. at the ends, where they are attached to the cutter bar and the cross head. Between the cutter bar and the cross head a long cross bar is placed, consisting of two long horizontal iron plates about 1½ in. thick, bolted together, and at the same time binding tight on the three arms. The object of this arrangement is to strengthen and stiffen the apparatus. Between these two plates at their extreme end a E-shaped piece of iron is bolted, carrying three after-cutters on the cross piece, which is curved to correspond to the sides of the shaft. The after-cutters serve the same purpose as those we have mentioned for the smaller boring apparatus—to round off any asperities of the bore hole. This large cutting instrument without accessories weighs from 7000 to 8000 lbs.

The guides for the larger boring apparatus must be arranged somewhat different to those we have described for the smaller instrument, otherwise the whole of the shaft must remain open during the lowering and raising of the borer. The guides, which are moveable on the shaft rod, can be suspended from the surface by two ropes. These moveable guides consist of two strong beams of wood, whose length equals the diameter of the shaft, and which are placed at right angles to each other. One of these guides is perfectly rigid; the other consists of three pieces, which are attached to each other by means of hinged joints. When the two outer parts are raised into a vertical position the tool can be passed through an opening of only 5 ft. in width, which happens when the borer is lowered into the shaft. By means of two ropes attached to the borer, and passing over two fixed windlasses at the surface, the borer and guides are lowered at the same time into the shaft. During the operation of boring the guides remain stationary, whilst the boring tool is raised and allowed to fall. The ends of the guides, which are subject to friction against the sides of the shaft, are covered with iron rings, which can be removed when worn out.

The attachment of the boring apparatus to the shaft rods is often made by an ordinary screw joint, or rather a large nut, which screws on to both the top of the boring apparatus and the bottom of the shaft rod. Such an arrangement is open to the objection that the screw and nut are liable to stick fast from rust, occasioning great difficulty when it is necessary to unscrew them. The boring apparatus is not attached rigidly to the shaft rods, a sliding apparatus is inserted called the "Gleitscheere" or sliding shears. The object of this is to prevent the concussion which takes place when the boring tool strikes the bottom of the shaft from being transmitted along the whole length of the boring rods, which would inevitably be bent or broken. The sliding shears consist of two principal parts, which slide in and upon one another. The lower of these is attached either by means of a nut and screw joint or gibs and cotters to the boring tool. It is formed of a piece of iron rectangular in section, which has a slit in the middle about 20 in. long. The other principal part is formed of two flat bars of iron, which are fastened together at their lower ends by a cotter, and at their upper ends by means of gibs and cotters to a short vertical rod which screws on to the lowest of the shaft rods. In some cases this portion is formed of a solid piece of iron terminating at the upper end in a screw and collar, in which a slit is slotted out for the lower part of the shears, which slides in the slit thus formed; the bottom part of the slit is closed by a cotter, which slides in the slit formed in the lower part of the sliding shears. Whilst the rods are being raised the whole weight of the boring tool is borne by this cotter. It has been attempted to use Kind's free-falling arrangement, but it appears to offer greater difficulties, especially when it is required to remedy or remove any obstacles or obstructions which take place during the boring, than the sliding shears, so that the use of free-falling apparatus for shaft boring by this method has been discontinued. More lately Sonntag, mining engineer at St. Louis, Mississippi, has given a construction for the use free-falling apparatus by this method, which we shall immediately describe; and more recently a somewhat complicated arrangement of Kind's grappling hooks, actuated by a spring and dead weight arrangement, has been successfully employed at the Rhine Elba Colliery, Glensenkirchen. This and the slit very soon became worn out, so that they should be made of steel, and the shears so constructed that they can readily be detached from the boring tool and the shaft rods. This arrangement, as will be evident, is essentially that of Von Oeynhausen's sliding shears for ordinary boring operations. The weight of the boring tool and connections amounts to about 14,000 lbs.

\* See No. XIX., Mining Journal, April 7, 1877.

## THE INDUSTRIAL RESOURCES OF VICTORIA.

The fifth annual edition—that for 1877-8—of the Victorian Year Book, prepared by Mr. H. HEYLIN HAYTER, the Government Statist of Victoria, contains as usual an enormous amount of interesting information. It appears that the Schools of Mines at Ballarat and Sandhurst are progressing satisfactorily, and continue to afford instruction in mining and industrial pursuits, to examine into the qualifications of persons engaged in such pursuits, and to test the products of their industry. The Ballarat Institution was opened at the end of 1870, and classes conducted by nine lecturers have been formed in Euclid, Algebra, logarithms, and trigonometry; mechanical engineering; mining; mining and land surveying; chemistry, metallurgy, and assaying; telegraphy; French and German. The chemical laboratory is furnished with 20 tables for students, each having about 70 re-agents and pieces of apparatus. The metallurgical laboratory contains 12 reducing furnaces for the use of students. The lecture apparatus includes air pump, thermopile, batteries, gaeometers, diagrams, &c. Pyrites works are in course of erection. During the January, April, July, and October terms there were 48, 58, 79, and 60 students attending lectures, and 21 certificates were granted in the year. The Institution has a good museum and library, and the visitors' book in 1877 was signed by 512 persons. Analyses and assays are undertaken for the public. The receipts in 1877 amounted to 2134., of which 1192. was voted by Parliament, and the expenditure to 1902. The weekly wages for mining labour in 1877 were—general manager, 2l. to 12l.; legal manager, 10s. to 6l.; mining manager, 2l. 10s. to 7l.; engineer, 2l. 5s. to 6l.; engine driver, 2l. to 3l. 5s.; pitman, 2l. to 4l.; blacksmith, 2l. 2s. to 4l.; carpenter, 2l. 2s. to 4l.; foreman of shift, 2l. 2s. to 3l. 10s.; miner, 14l. 10s. to 3l.; surfaceman (labourer), 14l. 10s. to 3l.; boys, 12s. to 2l. 10s.; and Chinese, 12s. to 14l. 16s. The value of the gold raised during 1877 was 3,238,612.; of other metals and minerals, 35,637.; and of stone, slate, and flagging, 48,015. = 3,322,264.

Education is shown to be progressing favourably. The matriculations at Melbourne University in 1877 were 103 (against 73 in the previous year), being the largest number since the opening except 1874, when they numbered 118. From the opening of the University

in 1855 to the end of 1877 the total number of students who matriculated was 1099. There are now 499 graduates, 293 of whom have graduated direct, and 206 have been admitted *ad eundem*. There are in the colony 2715 places for public worship, and 684 registered clergy; there is accommodation for 435,200 worshippers, and 298,681 usually attend. The Wesleyans are the most numerous, accommodating 132,895, and 95,207 attending; the Presbyterian churches are best filled; they accommodate 74,100, and 63,545 attend; Catholics can accommodate 103,093, and 65,315 attend; and the Church of England can accommodate 67,902, and 42,814 attend. The number of children receiving instruction in the public schools was 194,994, and there were 3860 instructors, 1804 males, and the rest females. In private schools, 15,631 Catholics; 2961 Protestants; 293 Jews; and 9537 religion not stated; yet the Roman Catholics appear to be the most ignorant class in the colony, for the number who signed the marriage register with marks, being unable to write, were Roman Catholics, 10.51 per cent.; Church of England, 4.42; Presbyterians, 4.34; Wesleyans, 4.32; Independents, 3.11; and various other sects under 3 per cent. Of those married before lay registrars 9.84 per cent. signed with a mark. Generally the women are more ignorant than the men, but the reverse is the case in the Church of England, Wesleyan, Lutherans, and Jews. In the United Kingdom those signing with marks are in England and Wales 20.20 per cent.; in Scotland, 15.45; and in Ireland, 33.50 per cent., or more than one-third of those married.

By summarising the returns of manufactories and works of all descriptions, it is found that with a trifling exception in the matter of horse power of steam engines, 1878 shows larger numbers than the former in all columns. The establishments increased by 68, and those using steam by 8; the hands employed by 1210, and the capital invested in lands, buildings, machinery, and plant by 639,795. The land alienated from the Crown in fee simple in 1877 was 323,341 acres; of this 259 acres were granted without purchase, and the remainder was sold, the average price realised being 17.3s. 3d. per acre. From the period of the first settlement of the colony to the end of 1877 the average rate has been 14.13s. per acre. About 1,420,502 acres are under tillage. The volume clearly shows the progress and prosperity of the colony, and its publication cannot fail to be advantageous in directing attention to Victoria as an attractive field for emigration.

**GEOLOGICAL SURVEY OF VICTORIA.**—The Report of Progress (No. 5) by the Secretary for Mines, with reports on the geology, mineralogy, and physical structure of various parts of the colony (obtainable of Messrs. Trübner, Ludgate-hill, and Mr. G. Robertson, Warwick-square), has just been issued. The volume contains reports on the geological survey of the country about the Thompson river, Aberfeldy river, &c., by Reginald A. F. Murray; on the country about Learmouth, on the granite areas at Yendon, and on the Clunes gold field, by Norman Taylor; on Daylesford, by Ferd. M. Krause; on the geology of portions of the Dargo and Bogong districts, by R. A. F. Murray and A. W. Howitt; on the Devonian rocks of North Gippsland, by Prof. A. W. Howitt; on the South Extended Sultan Mine, Blackwood, by Ferd. M. Krause; on the geology and mining resources of the North Waranga mining subdivision, by William Nicholas; schedule of reports on fossil specimens, by Prof. McCoy; laboratory report, by J. Cosmo Newbery; and a resumé of the operations of prospecting parties. Much time has been occupied in the completion of plans of work commenced in the preceding year, yet about 1210 square miles of country have been examined and geographically surveyed with more or less topographical detail, and the progress made has been generally satisfactory. In the previous report reference was made to the satisfactory yields of gold obtained from the Stawell quartz mines, which are the deepest in Victoria. As a matter of scientific interest, it may be mentioned that at the still greater depths from which quartz has been obtained at Stawell during the past year the yields continue to show no falling off. For instance, it is reported that 2599 tons of quartz from 1060 to 1120 ft. in depth averaged 2 ozs. 6 dwts. of gold to the ton; and 4212 tons obtained at 800 to 951 ft. from surface gave 1 oz. 8 dwts. 13 grs. per ton; and 1924 tons got at a depth of 850 ft. produced 2 ozs. 3 dwts. 1 gr. per ton. The appendices contain the usual information relating to the cost of the geological survey during the year, the publications printed and issued, the geological and mineralogical collections received, and the collections of specimens furnished or presented by the department, the donation of books to the library, and a list and other particulars respecting gold nuggets found in Victoria.

**MINERALOGY OF NOVA SCOTIA.**—The contributions to the mineralogy of Nova Scotia of Prof. Henry How, D.C.L., Vice-President of the University of King's College, Windsor, Nova Scotia, have frequently been referred to, and he has recently communicated to the Mineralogical Society an interesting paper on a remarkable deposit of large specimens of altered mordenite—a mineral discovered by him in the trap of the Bay of Fundy in 1864. Mordenite occurs in rather small masses, varying from the size of a pigeon's to that of a bantam's egg, in the form of somewhat cylindrical riniform or flattened geodes and solid concretions rather smooth externally sometimes coated with a thin yellowish crust, and sometimes exposing its own white, yellowish, and pinkish coloured surface. It is found alone and associated with barytes, apophyllite, gyrolite, and with a prehnite-like mineral; its lustre is highly silky weathering dull; it cleaves readily in directions parallel with the fibres, is translucent on the edges; hardness above 5, rather brittle; before the blowpipe it fuses in a good heat without any intumescence to a glassy bead; does not gelatinise, but affords slimy silica, with hydrochloric acid. The mean of five concordant analyses of specimens of the mineral occurring alone and in different associations was—soda, 2.35; lime, 3.46; alumina, 12.77; silica, 68.40; water, 13.02=100. It was stated to be the most highly silicated of the aluminous non-magnesian hydrous silicates yet described, and Dana places it as the last of the zeolites. Hartt and others who have given great attention to minerals of this class confirmed How's view as to mordenite being distinct from mesolite and other fibrous zeolites, and Dr. Feuchtwanger, of New York, entertained the same opinion. Prof. How now (September, 1878) directs attention to a somewhat analogous mineral found at Cape Split, a projection of the triassic trap into the Bay of Fundy, about 13 miles west of Cape Blomidon, by Mr. Joseph Steel, a collector who lives at Scots Bay, and with regard to it Prof. How says the altered mordenite now described is so well defined in its character as to mode of occurrence, locality, associations, form, and size of individual specimens, &c., that he proposes to give it the distinctive name of steelite as a variety of mordenite.

**GEOLOGISTS' ASSOCIATION.**—It has been suggested by several members of the Geologists' Association that the occasion of the retirement of Prof. Morris from the Presidential Chair, which he has occupied on different occasions for so many years, would furnish a most appropriate occasion for its members to express, by means of a testimonial, their high sense of the great benefit he has conferred on the Association by his valuable services in the chair, and as the director of many of its excursions. Dr. J. Foulerton, of Bayswater, has undertaken the duties of honorary secretary, and Mr. F. G. H. Price is honorary treasurer. The presentation will take place, on Feb. 7, at University College, Gower-street.

**THE SLATE TRADE.**—An important manifesto bearing upon the present position of the slate trade—the staple industry of North Wales—has been circulated by the Executive Council of the North Wales Quarrymen's Union. The trade, it is stated, has within the last six months got into one of the strangest and most sudden panics ever known, the present danger being lest the employers should endeavour to push matters too far, and take advantage of the stagnation to repeat their attack upon the Union. The council complain of the apparent reluctance of quarry proprietors to continue the practice of making stock preparatory to a revival of trade, the men preferring to work such stock at a most reasonable price rather than having their hours shortened. Looking at the present state of affairs, and that the reason assigned for the reduction of wages and the shortening of hours is the inability of quarry owners to sell the quantity of slates made, the Union has resolved upon voting to each

\* Being Notes on a Course of Lectures on Mining, delivered by Herr Berggrath Dr. von GROSSDORF, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.



vans. Each truck was limited to carry a load of 6 tons. The r of tares and loads were for the low-sided wagon 1 to 2.105; m wagon, 1 to 1.905; covered van, 1 to 1.714. Well equipped sta occurred at intervals of about 20 miles. The water-supply incl the construction of large covered concrete underground tanks, with a capacity for 600,000 gallons, with over-head tanks and pumps. The author finally reverted to the evils of the brea gauge. Queensland had adopted a gauge of 3 ft. 6 in.; New S Wales, a gauge of 4 ft. 8½ in.; Victoria one of 5 ft. 3 in., and S Australia had gauges of both extremes.

FRONGOCH MINING COMPANY.



The quartz crushed on joint account by the company for the year ending Oct. 9, 1878, was 14,380 tons, being a decrease of 7614 tons as compared with the year 1877. But there has been a nearly corresponding increase in the return from the tributers' quartz. The average yield per ton of the quartz from the companies' account for the year 1878 gave 2 dwts. 1 gr. as compared with 6 dwts. 1 gr. in 1877. The pyrites saved amounted to 399 tons 5 cwt., yielding 1535 ozs. 7 dwts. producing, after deducting costs of reduction and royalty a sum of \$1441.75, being an increase of 77½ tons, or 1326% of profit. There was crushed for tributers during the year, 46,636 tons of quartz, being an increase of 5360 tons, and 469 tons for the New North Claines Company, making a total of 61,494 tons, a decrease of 1786 tons as compared with the year 1877.

The produce of gold, including that from pyrites, during the year 1878, was 5658 ozs. 19 dwts. on the companies' account and 15,614 ozs. 1 dwts. 18 grs. on tributers' account, making a total of 21,273 ozs. 0 dwts. 18 grs. being a decrease of 3000 ozs. 3 dwts. 18 grs. as compared with the year 1877. The receipt and expenditure at the mine on the companies' joint account, including a balance from the previous year of 2274. 12s. 10d., show a credit balance of 18,567. 14s. 2d., as compared with the year 1877.

The average yield per ton of the quartz crushed from the commencement of the companies' operations in March, 1874, has been 7 dwts. 22½ grs. upon 1,046,081½ tons; and the total yield of gold for the same time has been 641,499 dwts. 1 gr., of the value of 1,461,394.48.8d. The steam barrel in which the concentrated savings from the Chilian mills are treated, and which was introduced for the purpose of reducing the cost of mercury, has effected a saving during the year of 1000 lbs. of mercury, 100 lbs. of silver, and 101½ ozs of gold, while the cost of working the barrel has not been felt.

Pending a more permanent arrangement, the present agreement with the owners of the mine on the subject of royalty, is as follows:—Quartz yielding 4 dwts, and

MILLINERY AND DRESS ASSOCIATION (Limited). — Capital 200,000*l.*, in shares of 5*l.* The carrying on the business in the United Kingdom and elsewhere for the supply of ladies' and children's dresses of every description. The subscribers (who take one share each) are—R. L. Cusack-Smith, 108, Eaton-square; T. B. Edwards, 19 and

ANOTHER CURE OF BAD THROAT, COUGH, &c. (THIS WEEK), BY DR. LOOOCK'S PULMONIC WAFERS.—From Mr. Heron, 10, Arthur-street, Belfast, Oct. 11, 1877: "I am subject to inflammation of the throat, and suffer greatly in cold weather from a cough. Dr. Loocock's wafers relieved the cough, allayed the inflammation, and gave me ease at once."—Sold at 1s. 1½d. and 3s. 9d. per box.



## WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,  
MINEOWNERS, STOCK AND SHARE DEALERS, &c.  
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Ten years ago the weekly information which had previously been published for a great number of years in *WATSON BROTHERS' Mining Circular* was transferred to the columns of the *Mining Journal*, with the following announcement; which is now reproduced in consequence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the *Journal* on the Clementina Mine.

In the year 1848, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1848, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and shareholding than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining district, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash or for the usual fortnightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charges for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in upon the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

**CUBIC AND LINEAL FATHOMS.**—As a rule mining agents in their reports refer to lineal and not to cubic fathoms. When the latter are referred to, as in the Van reports, they are generally described as such. And there is a vast difference between the two. Thus, take a report which says "the lode is 18 ft. wide, worth 20 tons of ore per fathom." This is intended to convey that the 20 tons of ore are contained, or estimated to be so, in ground one fathom long and three fathoms wide; which in reality is not quite 7 tons per fathom. A lode 18 ft. wide worth 20 tons per cubic fathom, is worth 60 tons for the width of the lode, which has in it 3 cubic fathoms.

**SENTINEL.**—We are informed that an average of 60 men have broken 1075 tons of 45 per cent. lead ore in three months.

**GREAT LAXEY.**—We did not take in the profit made in the steamship account, because—1st, we considered it distinct from the mine; and 2nd, although it is given as 9111. 19s. 9d., there is a sum due from the mine for freights, &c., on general account 2876l. 12s. 10d., and in consequence the "ship" owes to Dumbell's Bank 1433l. 2s. 10d., and to other persons 576l. 17s. 11d.

In 1877 there were twenty lead mines paying dividends; their paid-up capital was 718,754l. The dividends they had paid amounted to 1,967,677l., and their market value was 1,725,783l. The fall in lead since that time has materially affected profits, but we hope it may improve ere long.

**COPPER.**—The lessened production in England may be shown by the following statistics. In 1860 the quantity raised and sold was 236,696 tons, realising in money 1,507,134l. At that time the price of copper was 109l. 13s. 10d. per ton. For the year 1878 the sales of ore were 35,669 tons, realising 160,113l. 0s. 6d., or little over one-tenth of the quantity sold in 1860. The price of copper, too, has fallen from 109l. 13s. 10d. to about 60l. The consequence is many mines have been stopped, and others which have kept on have only been able to return the best ores, and to leave in the mines those of inferior quality. Wheel Crebor would have paid dividends with copper at the old price. So would Parys Mountain, which could make large returns at any remunerative price, but is now confined to the precipitate pits and ochre so far as returns are concerned, and the delay in getting into ore at the 90 cross-cut south represents a money expenditure.

**WEST CHIVERTON** (with Wheal Chiverton) was purchased in March, 1863, from a widow lady for the sum of 30,000l., divided into 3000 shares, and sold to the public at 20l. per share, or at the rate of 60,000l. Shares afterwards rose to 60l. each, and the mine under the old management paid over 160,000l. in dividends, and then became poor. During these operations a large stock of blende accumulated, which, rising in price, enabled good profits to be again made for a time. Latterly the mine has not paid, and the accounts for some time have been in an unsatisfactory state. The debt to the Cornish Bank is said to be 8000l. Many years before 1863 Wheal Chiverton was worked by a London scrip company called the "Cornubian," and returned lead to the value of 100,000l. West Chiverton, as an offshoot, was introduced at that time as Venton Gimps, but did not succeed. Both mines were afterwards bought by a solicitor, and sold by his widow, as above stated.

**HULTAFALL.**—We are asked various questions and all sorts of advice in regard to this mine, and as we should not advise anyone to sacrifice his interest just now, so we would recommend those who can do so to take up debentures and save the property. When the company was formed we were urgently requested to take shares, but we declined to do so, because we considered the working capital (only 10,000l. out of 60,000l.) was insufficient to bring the mine into a productive or profitable state, and the result has proved that we were right. We hear, however, good reports of the mine, and it would be a pity to see it go out of present hands for others to come in and reap the reward of success, to reach which we are assured only money is required.

There can be little or no risk in buying such shares as South Frances, South Condurrow, and Wheal Pevor. They are about the best of the tin mines to pay, and will rise in market value.

**MR. WILLIAM H. H. WATSON** having had some years' experience in Practical Engineering and Mining in Cornwall, as well as two years' practice in the London Stock and Share Markets, begs to offer his advice and services to Shareholders and Intending Investors in Mines, and in the Purchase and Sale of Shares.

Address: W. H. H. WATSON, 1, ST. MICHAEL'S ALLEY,  
CORNHILL, LONDON, E.C.

**JOINT-STOCK COMPANIES.**—It appears from a return just issued that in the year 1877 there were 958 companies registered under the Companies Act of 1862, with a proposed capital of 66,800,186l., and 30 without nominal capital. In London there were registered 808 limited companies, with a capital of 51,124,096l.; three unlimited, with a capital of 562,000l.; five old limited, with a capital of 970,000l.; three old unlimited, with a capital of 1,720,000l.; and 27 without nominal capital, of which 21 were limited by guarantee, and six were mutual companies. Nine limited companies, with a capital of 230,540l., were formed within the jurisdiction of the Vice-Warden of the Stannaries. In Ireland 47 limited companies were formed, with a capital of 2,146,450l.; and in Scotland 83 limited companies were formed with a capital of 11,412,900l.; and two unlimited companies, with a capital of 230,000l.; and three companies

(two limited by guarantee and one mutual company) without nominal capital. From Jan. 1 to May 31 of last year there were 377 companies registered, with a proposed capital of 21,901,783l. 6s. 8d.; and 29 without nominal capital. In London, 335 limited companies were formed, with a capital of 14,429,415l.; three old limited companies, with a capital of 15,235l.; two old unlimited companies, with a capital of 500,000l.; and 29 companies (24 limited by guarantee and five mutual) without nominal capital. In the Stannaries, five limited companies were registered, with a capital of 194,833l. 6s. 8d.; in Ireland, 12 limited companies, with a capital of 752,000l.; and in Scotland, 18 limited companies, with a capital of 1,006,300l.; and two unlimited, with a capital of 4000l. The total number of companies having their registered offices in the City of London, or within five miles of the General Post Office, at the date of the return was 254.

**LIQUIDATION OF DEFUNCT JOINT-STOCK COMPANIES.**—A correspondent writes—"Hundreds of companies have within the last ten years gone into liquidation. Liquidators have been appointed, and the unfortunate shareholders have never afterwards heard anything more of the funds, nor any accounts of the winding up, nor any returns of money from the liquidators. The following are a few of the companies in which I was interested, and everything in connection with them seems to have sunk into a dead repose, except that the liquidators have called upon the shareholders for the full amount of their shares:—The Braganza Gold Mining Company, East Bottle Hill Mining Company, Great Western Silver Mining Company, Duchy Great Consols Lead Mining Company, Canadian Native Oil Company, and several others. When liquidators are appointed by the Courts it is their duty to collect all the money from the shareholders, and never render any account to them, nor pay them back anything from the assets?"

## Mining Correspondence.

## BRITISH MINES.

**ABERLYN.**—John Roberts, Jan. 22: We are still opening along side of the lode in the bottom of the No. 2 adit from the end of the rise, and are also clearing out the stuff (debris) as fast as possible, so as to make room for throwing down the blende, as well as working on the blende lode. There is no change in the character of the lode. The winze in No. 1 level is still looking well for blende. Surface: We are pushing on this work as fast as the weather will permit. We have completed the excavation for the upper dressing floor, and by Saturday we shall complete the shaft from the office to that point, and as soon as we have cleared out all the waste from the level we shall be ready to tip the blende close down by the crusher-house. We have brought down most of the heaviest parts of the crusher and wheel from the top of the mountain, and shall commence erecting in a day or two.

**BELL VEAN.**—John Brokenshire, Jan. 22: Water of a very high temperature is still rushing from the end of the deep or ss-out adit level, south of Mitchell's shaft, indicating that we are nearly approaching a very strong copper lode. The porous nature of the ground renders driving comparatively easy, but lets down the water so readily that it is somewhat difficult to estimate precisely the distance the lode may be ahead. However, I venture to predict that we shall meet with something worth while very shortly. We are preparing pipes to remedy the defective ventilation, so that this difficulty will now be removed.

**BLUE HILLS.**—S. Bennetts, P. Bennetts, Jan. 18: The sinking of the Blue Burrow shaft is again progressing very satisfactorily since it has passed through the large gossan. The north lode in the 30 fm. level east end is 3 ft. wide, and worth 12l. per fathom. The stopes in the back of this level are worth 8l. per fathom.

**BODDRIS.**—H. Hotchkiss, Jan. 21: In the easternmost shaft, sinking under the 45, the ground still keeps hard; progress rather slow. On footwall of present sink we have about 6 in. wide of spar for the full length of the shaft, mixed with blende and lead ore. There is more lode standing in the footwall side; this we shall begin to take down to-morrow, so that I will let you know how it looks at the end of the week. The 45 end east is being urged on with all possible speed in a large and promising lode, 3 ft. wide, containing blende, with a little lead ore. All other parts of the mine are without change, but all points are being pushed on with all speed possible; and the engine and other machinery are working well, but, owing to the severe frost, we are unable to do any dressing at present.

**BRITISH SILVER LEAD.**—John L. M. Fraser, Jan. 22: The stopes in the eastern shaft is slightly improved, being worth a little over 2 tons of silver-lead ore and 1 ton of rich blende per fathom; there is every indication that when about 10 yards deeper a large body of ore will be met with. In consequence of the continued frost, dressing operations are at a standstill.

**CLEMENTINA.**—J. Roberts, W. Sandoe, Jan. 22: The 60-ft. wheel has now been all brought on the mine, and the masons had made a very good start with the masonry under the wheel, but the present severe weather has again hindered us for the time being; but the understanding with the masons is that they are to work on this job every day or half day that the weather permits until it is finished, and with fine weather we could complete this work in a week or nine days. The miners when not engaged with this surface work are all employed in the stopes in the shallow level, where we are breaking some very good lead, the lode having improved since we started.

**COMBARTIN.**—T. Comer, Jan. 23: The lode in the adit level north-west has produced some capital stopes of lead ore and blende during the past week, but at present the lode is a little disordered by a cross-head. The ground in the adit cross-cut has become a little easier for driving, which enables the men to make better progress. The ground is of a light blue kilaas, with nice seams of quartz, spotted with lead and mundie.

**DE BROKE.**—J. Phillips, Jan. 22: I regret to say that a recurrence of exceedingly stormy weather, with hard frost, has stopped our wheels, but we had nearly drained the 35 when it came on. No hands except the pitman are employed, nor have been, except to change buckets and do some repairs to the shaft-rods, which broke since your letter of the 16th inst.

**DERSBY CONSOLS.**—J. Roberts, W. Sandoe, Jan. 22: In the end driving west towards the Cobblers' lode the ground generally keeps much the same as last week; but on the heading wall near the end of the level there are indications of a new lode being near hand, the lode here being very similar to that just before the last lode appeared. Should this come in again soon it will greatly help the driving, which for the past few weeks, owing to the stiff nature of the ground, has been rather slow. This end is driving by a full set of (six) men; price 12l. per fathom.

**DERSBY MOUNTAIN.**—J. Roberts, W. Sandoe, Jan. 22: The No. 1 level to drive by two men, at 7l. per fathom, for 1 fathom. The lode here is large, but at present rather disordered; but from the fact of its letting out water more freely than is usual we expect a change soon. No. 2 to drive by two men, at 7l. per fathom, for 1 fathom. This is a good lode, and the men are doing well. The character of the lode there we expect this will open up a good piece of ore ground. The rise in No. 3 level to four men, at 12l. 10s. per fathom, for 1 fathom. Here the lode at present is not so good for lead and blende as for some weeks past, but the lode maintains its size and kindly appearance. The new shaft from surface to No. 4 level is to a full pair of (six) men, at 6l. per fathom, for 2 fathoms. In the No. 5 adit we are still engaged securing the fall (or crush), no doubt produced by the frost, and which to do a good job will take us several days to finish. The present severe weather is against the dressing operations, but we are working steadily, but during this severe weather we cannot clean off any lead.

**DEVON GREAT CONSOLS.**—I. Richards, Jan. 23: Wheal Josiah: Richards's Shaft: In the 300 east the lode is 3 ft. wide, consisting of capel, quartz, and a small quantity of mundie. In the 280 west the lode is 5 ft. wide, about 3 ft. of which is composed of capel, quartz, with a small quantity of mundie; the other portion, about 2 ft. wide, is principally kilaas. These two points of operation will be suspended at the end of this week.—Wheal Emma: Thomas's Shaft: In the 216 east the lode is 2 1/2 ft. wide, composed of capel, quartz, and mundie, interspersed with kilaas. This driving will also be suspended at the expiration of this week.—Inclined Shaft: In the 137 east, west of Friend's cross-cut, on the new south lode, the lode part being carried is 2 1/2 ft. wide, composed of capel, quartz, peach, and a little mundie and copper ore.—New Shaft, New South Lode: In the new shaft below the 190 satisfactory progress continues to be made in sinking on the north side of the lode. In the 190 fathom level east the lode is 5 ft. of which is being carried, continues to look well, and is worth 6 tons of copper ore, or 20l., and 8 tons of mundie per fathom. In the 190 fathom level west the lode is 5 1/2 ft. wide, being at present composed of capel, quartz, and copper ore, worth 1 ton, or 3l., and 5 tons of mundie per fathom. In the 175 east, the lode is 5 ft. wide, and 5 tons of mundie for the length of winze (9 ft.) tons of copper ore, or 28l., and 5 tons of mundie per fathom. In the 175 west the lode is 3 ft. wide, and worth 2 tons of copper ore, or 6l., and 2 tons of mundie per fathom. In Hockaday's winze in the bottom of the 175 the lode, 4 1/2 ft. of which is being carried, is composed of capel, quartz, peach, and copper ore, worth for length of winze (9 ft.) 2 tons of copper ore, or 6l., and 3 tons of mundie per fathom. In the 130 east the lode is 2 1/2 ft. wide, composed of capel, quartz, and a small quantity of both mundie and copper ore. In the Railway shaft sinking below the 160 the lode is 5 ft. wide, composed of capel, quartz, peach, mundie, and a little copper ore of good quality.

**DUBBY SYKE.**—Wm. Vipond, Jan. 17: The rise is now close to the limestone on the other cheek, if not really to it. I am sorry to say that we see no indication yet of improvement. I suppose there is nothing for it but to rise on, hoping for better things, and prove what there really is in it.

**EAST CRAVEN MOOR.**—D. Williams, Jan. 23: New Shaft from Surface: The 51, east of shaft, is driven by a full pair of men in a vein 4 ft. wide, consisting of gossan, spar, and lead ore, worth of the latter 2 tons per fathom. The 51, west of shaft, is driven by six men in a vein 3 ft. wide, worth 1 ton of lead ore per fathom. In the 30 west the vein is 2 ft. wide, and worth 1 ton of lead ore per fathom. In the cross-cut south from the 43 to the parallel veins good progress is being made, and we have intersected several branches of spar, with good spots of lead ore. In the 58 west the ground is a little easier to work, and the vein is promising, being fully 3 ft. wide, and producing saving work for dressing.

**EAST VAN.**—Wm. Williams, Jan. 22: The cross cut in the present end of the 70 west has been driven through the lode, but discovered nothing of value. We have, therefore, removed the men to cross-cut a few feet south after a flier or branch of the lode, which appears to go into the hanging. We are still crossing north in the 26 fathom level, but have not reached a footwall, nor seen any lead in it yet.

**GLENROY.**—R. Rowe, Jan. 21: We are now down deep enough in the shaft for the proposed small lode, and are cutting it; as soon as done, which will be in a few days, the shaft will be sheathed to bottom for drawing, and sinking again resumed. The cross cut at the 25 has not intersected anything beyond a range of branches with lead, blende, and copper in them.

**GORSBDD AND MERLYN.**—W. Edwards, Jan. 23: The various points of operation do not present any particular change since my last, excepting that on the driving north on the north and south vein at the 70 ft. level, we are now east and west, where we hope to make a great discovery. There are good things like it all over the mine, but we cannot dress yet. The progress during the settling in a spiral month is as follows:—The cross-cut south extended 4 yards 6 in., north 1 yd. 9 in., 1 ft. 6 in.; stoping 70 west 8 yards 1 ft. Tribute, 4 tons 10 cwt. at 6l., makes 95l. 7 cwt. at 6l.

**GREAT HOLWAY.**—Jan. 23: The Garden shaft lode is producing some lead ore, and there are signs of an improvement in the upper portion of the level. We are glad to say all the heavy machinery is now on the mine, and so soon as we have a change in the weather surface operations will be resumed.

**GREAT RETALLACK.**—John Harris, Jan. 18: In our new drive, at about 4 1/2 fathoms from surface, at the boundary shaft, I am pleased to say the men, who are making excellent progress with their driving through the lode towards the footwall. We have also met with a nice leader of good blende, which will produce from 8 to 7 cwt. per fathom. The ground looks very favourable for meeting with other branches of blende as we are cross-cutting the lode.

**GREEN HURTH.**—Wm. Vipond, Jan. 17: You would no doubt receive a telegram sent from here last night. We seem to have got hold of the vein at 15 ft. level, and the ore is rather more spread about to-day, not exactly in such a solid rib, but still as good as reported in telegram, with vein, rider, and ore still in east side sump; I should say it will yield 6 tons of ore per fathom, or perhaps more. The sump is still in hazle, and clear of water. The stopes on No. 3 cross-vein has been a little better this week; worth 10 cwt. of ore per fathom. The working now on No. 3 is poor; it has not been paying cost this week—it looks a little better to-day. If we only had fresh weather these men would get to the incline level, and if the mine keeps anything like what it is, and we should have a change of weather, you will very soon hear of some ore being on its way from the mine to Alston.

**GREEN HURTH.**—C. W. Harrison, Jan. 24: Telegram: Vein in sump better worth 12 tons per fathom, improving still in hazle.

**HARWOOD.**—W. Tallentire, Jan. 17: Herdship: We have nothing special to report in the south end; the stopes is producing from 6 to 8 cwt. of lead ore per fathom. We shall try in the east and west vein next week as much as possible.

**HINGTON DOWN.**—T. Richards, Jan. 23: Bailey's Shaft: In the 172 east the lode contains capel, quartz, mundie, and copper ore, worth 3 tons of capel per fathom. In the 172 fathom level west the lode is large, and composed of capel, quartz, mundie, and stones of copper ore. In the stopes in the back of the lode at the 172 will produce 6 tons of ore or 15l. per fathom. In the 160, west of Nicholl's winze, the lode continues large and promising. In the tributary stopes and pitch, in the back of the 110, the lode is very promising, yielding 3 tons of ore, or 6l. per fathom. In the deep adit the ground is more favourable, and progress is being made.

**LADYWELL.**—Arthur Waters, Jan. 23: We are pushing on the new shaft below the 18 as fast as possible. The winze below the 18, south of shaft, is opening out ground which will produce, I think, 15 tons of ore per fathom. In a strong carbonate of lime lode, the spar being well charged with lead ore, worth 1 1/2 ton per fathom. Other points as for some time past. It is impossible to do anything on the dressing floors this week.

**LLANRWST.**—Robert Knapp, Jan. 23: The lode at the diagonal shaft has considerably improved towards the bottom; we have completed taking it down, and shall commence driving at once. For the length of the shaft (12 ft.) it will produce 2 tons per fathom. The 14 east again shows signs of improvement, while at the adit we have still a very kindly lode.

**LOVELL (THE).**—J. Prisk, Jan. 22: The lode in the 40, east of Hownan shaft, is 10 ft. wide, worth 18l. per fathom, and looking exceedingly well. The lode in the back of the 40 west is 12 ft. wide, worth 18l. per fathom. The lode in No. 2 slope is 15 ft. wide, worth 18l. per fathom. The lode in No. 2 slope is 9 ft. wide, worth 17l. per fathom. On the whole, the mine is looking better than it has for some considerable time.

**MARKE VALLEY.**—Wm. George, J. Stenlake, Jan. 23: There is no change in any part of the mine since our setting report worthy of notice.

**MELLANBY COPPER.**—John Gilbert, Jan. 22: The lode in the 30, west of Gundry's shaft, is 2 1/2 ft. wide, and worth 2 tons of copper ore per fathom. The lode in the 40, west of shaft, is 2 ft. wide, and producing some saving work for copper ore, and looking a little more promising than for some time past. The lode in the 50 fathom level, west of the shaft, is 3 ft. wide, and worth 1 ton of ore per fathom. The lode in the 60 fm. level, west of the shaft, is 3 ft. wide, and worth 2 tons of ore per fathom. The winze in the bottom of this level, west of the shaft, is worth 3 tons of ore per fathom. The lode in the 70, west of shaft, is 5 ft. wide, and worth 2 1/2 tons of ore per fathom. The rise in the back of the level, west of the shaft, is worth 4 tons of ore per fathom. The lode in the 81, west of shaft, is 6 ft. wide, and worth 2 tons of ore per fathom. The lode in the 90, west of shaft, is 6 ft. wide, and worth 2 tons of ore per fathom. The lode in the 100, west of shaft, is 5 ft. wide, and worth 2 tons of ore per fathom. The winze at the bottom of this level, east of shaft, is worth 2 tons of ore per fathom; this winze is down 4 fathoms, and is about 10 fathoms in advance of the 100 fm. level. The lode in the 100, west of shaft, is 5 ft. wide, and producing occasional stones of good ore; we have now six men driving this end, to push it on as fast as possible to get under the good ore ground that we are driving through in the 90 fm. level. The lode in the 100, east of shaft, is 3 ft. wide, and still worth 1 ton of ore per fathom. There is no change to notice in the ground in Gundry's shaft; the men are now engaged in cutting ground for better and clearer out. Skip-shaft. We have had to suspend the winze in the bottom of the 90, west of the shaft, in consequence of cutting an influx of water, and we can scarcely calculate to resume the sinking before the wet season is over; we have put these men to drive the 100, west of Gundry's shaft. The lode in the 100, west of the shaft, is 4 ft. wide, rather disordered with the influence of the cross course, but still producing good stones of copper and tin ores. Our machinery and all pitwork are in good order and working well, and all our surface operations are again in full swing. We sampled yesterday (computed) 401 tons of copper ore.

**MINEVAL CORPORATION OF GREAT BRITAIN.**—W. Bennetts, Jan. 25: HAFNA MINE.—No. 1 Adit: The lode in the above end at present is disordered by some cross branches, which leads me to believe that the most productive part of the lode is to the north of our present drive. This we shall prove in the stopes, which we are working 12 fathoms behind the present end, and which stopes is producing fully 15 cwt. of lead to the fathom.—No. 2 Adit: The lode in the end is 4 ft. wide, all of which must be saved for the dressing floors; this end we are pushing on with all possible speed, and I am glad to say that the lode improves every foot driven, and expects a great improvement in this end as we advance into the mountain, as the ground has all been taken away by surface for a considerable distance, as shown on the plan. In No. 3 adit end cross-cut we have cut two lodes, one of which is 3 ft. wide, and has a most promising appearance. We shall next cross-cut to this lode, 25 fms. further west, at the extreme end of No. 3 level, which we hope to accomplish next week, after which we shall drive west to get under the shaft sunk in the bottom of No. 1 adit, where the lode is worth fully 2 1/2 tons of lead to the fathom. I would here remark that this end will be 28 fathoms deeper than the bottom of the shaft.—No. 4 Adit: The lode in this end has been disordered by some cross branches, but I am pleased to say that the lode this afternoon is looking better than I have seen it for some time past.

**GREAT D'ERESBY.**—Deep Adit: The men are making fair progress in driving, and I am pleased to say two branches that I referred to in my last report have been and still are producing some nice lead. This I look upon to be a most important feature in the Great D'eresby Mine, as we are in a new lode, and one that is likely to be very productive, especially at the intersection of the Fuchaslas lode.

**BRYN CANADON.**—We have commenced clearing up the old workings, and hope to have something good to report on this line. Mr. Frost has been down, and attended to the pay of the different miners which was passed off last week. He has also thoroughly inspected the mines both underground and at surface, and expressed himself well pleased with the appearance of the mines and the progress that has been made since we commenced, which is very pleasing and satisfactory to me. All being well, I shall to-morrow send to Paris a box of lead which weighs nearly 3 cwt.

**MONYDD GORDDU.**—James G. Green, Jan. 22: Owing to the stoppage by frost of our pumping-wheel, the water rose in the mine above the 24, which we find, now the water is clear again, to have caused in just where the cross-cut intersected the lode in the first instance, the winze being put in has saved away in the sole out of sight. We are now engaged clearing and repairing this point, as it will hinder us entirely from getting at the orestuff broken in this level. The winze in course of sinking has a little improved during the week, worth 25 cwt. per fathom. No other change to notice. Since writing your last we have had a few days dressing, and have now 12 tons in the bin, the frost, however, has again looked all up.

**MORFA DU.**—T. Mitchell, Jan. 22: The various points of operation continue to look much the same as when last reported, and everything going on in the usual regular order. Saturday next will be setting day.

**PARYS MOUNTAIN.**—T. Mitchell, Jan. 22: The ground in the 90 south has eased a little this week. It is now speedier for cutting, and better progress is being made in the driving. Small strings of copper and sulphur are still showing in the forebrest. Saturday next will be setting day.

**PATELEY BRIDGE.**—C. Williams, Jan. 23: I have no change to report from the mine this week. The 30 east is worth 35 cwt. per fathom, and the vein in the sump winze under the 30 east is as rich as ever, worth 10 tons of lead ore per fathom. The cutting of ground foundation for the new engine is progressing favourably. Smelting is being carried on regularly. Machinery working well.

**PENYALLS.**—S. Bennetts, P. Vian, Jan. 18: The north part of the lode in the 70 east end is 1 1/2 ft. wide, and worth 7l. per fathom. The top lode in the 60 east end is at present small, although rich stuff. On a south section the lode in the 55 east is worth 6l. per fathom. The rise towards the flat-road shaft from the 61 is letting down some water, but not as yet sufficient to drain the shaft.

**PENNANT.**—Jan. 23: I am pleased to say that the 40 fm. level west is looking very well. There is a great change in the 29 cross cut, and I think we are close to the lode.

**PENYTRUTHALL.**—Wm. Polkinghorne, Jan. 22: The 88, driving west of High-burrow shaft, since last report, we have intersected the lode, which is 2 ft. wide, but we shall have to open on it a little further before it will be clear from the influence of the elvan course. In the 88, driving east of Highburrow shaft, the lode is increasing in size as we are extending the level; the character of the lode is not changed since last reported, but a large quantity of water is flowing from the end, and at the 88 above, and about 10 fathoms east, where we had water similar to this end we met with a good deposit of copper ore. The 72, driving west of shaft, is without change. We have communicated the winze from the 58 to the 72, which will give good ventilation, and we shall commence to stopes away the ground at once. In the 54, driving east of shaft, I am pleased to say within the last few days the lode has improved, being now worth for tin 10l. per fathom, and has every appearance for further improvement; if so, I will advise you again. The 46 fm. level cross-cut, driving south, is much the same as last reported.

**PIOTON.**—John Woolcock, Jan. 21: The shaft is now down to the 146; the men are now engaged repairing lode. I expect to get in the level next week to prove the new lode seen in the old ladder-way. We have 10 yards more to clear out and re-timber in the 123 north to reach the spot where ore is said to be left by the old men. I am pleased to state that we have just cut the lode in the bottom of the sump in the 123 south; as far as we have yet seen, it is a strong and masterly lode, composed of clay and spar, and yielding good stones of lead ore. I purpose sinking 2 yards more, then drive out on the course of the lode. In my next I hope to be able to report something good at this point. On the whole, our prospects are more encouraging. Dressing is all at a standstill in consequence of the severe frost. Machinery works well.

**PRINCE PATRICK.**—H. B. Vercoe, Jan. 16: You will be pleased to hear that the mine continues to improve. We have a splendid course of ore in the main



expectations. Thanking you for your kind remarks tendering us the compliments of the season, I beg to wish you the same, and trust with yourself, that we shall all have happy and successful years, which I have not the least doubt, judging from the indications the mine presents.

**RICHMOND CONSOLIDATED.**—Telegram from the mine at Eureka, Nevada: Week's run, \$18,000, from 317 tons of ore. One furnace started Saturday; third this (Monday) morning.—Week's produce of refinery, \$30,000.—R. RICKARD.—(It is assumed from the telegram that one furnace has been running all the week; that one of the blocked furnaces was re-started on Saturday, the other yesterday.)

—R. Rickard, Jan. 2: During the past week there is no change to report from the mine. No. 11 chamber is opening very well, and will make a large body of ore. The No. 12 work area where they began to stoppe, but at present it is in good ore. All the other ore chambers are without any material change. There is no change in the several drifts since last week. The 400 has been advanced 9 ft. in hard limestone. The 600 south-east cross-cut has been drifted 25 ft. on a fissure and broken limestone. The 800 on quartzite has been drifted 18 ft.; work in this drift has been suspended for the time being, and a winze started to connect with the 900 west drift for ventilation. The 900 west drift has been advanced 33 ft. in limestone; very good ground for drifting. The 1000 ft. level has been drifted 10 ft. in a westerly direction on the quartzite; the present haul shows very good indications for a large body of ore in good working order. The furnaces are doing much better the last few days, smelting over 50 tons daily each, I expect to increase to over 60 tons in a few days more.

**MINERAL HILL.**—Mr. Plummer, Dec. 19: Union District. The strike is now down 55 ft., and we have a first-class wall on its western side. The carbonate is getting more plentiful, and before 100 feet is reached we expect to get something good.

—Dec. 20: Since writing to you last we have broken some ore from the western stoppe. In Union district the shaft has been deepened 6 ft., thus making its total depth 61 ft.

**ISABELLE (Gold and Silver).**—Below are some extracts from a letter from the manager at the mines, bearing date Dec. 30:—Mr. Hawkins, U.S.D. surveyor, completed his survey on Tuesday. On Wednesday I commenced grading for the foundation of the building to cover the air compressors and boilers, blacksmith shop, &c., which is now well on. The bridge over the river is almost completed. As there is no lumber in this vicinity at present, and hauling is getting bad on account of snow, I was rather at a loss for that indispensable commodity. I was able, however, to purchase a building from another company on reasonable terms, which will do for me, to demolish, and reconstruct thereupon, when the grading is completed. The men who did the planking of the bridge, when the grading is done I shall put as many men as I can work into the open cut of the tunnel, which will be from 40 to 50 ft. long before I get under cover. It is a very bad season to have so much outside work to do, but I will do my best, and am making good headway. The men I have engaged at \$2.50 per day, which is something new in this part of the world. I shall run the tunnel rather larger than I intended—8 ft. by 9 ft.—as except in the one item of running out rock a foot does not materially increase the expense, while it gives so much more space for work, and these dimensions will be none too large for a tunnel to be used by trucks. In conclusion, I need scarcely assure the directors that I will push this work with all speed consistent with economy."

**SENTEIN.**—The manager, under date of January 18, reports: We have increased the number of miners this week to 35, and have broken about 70 tons of ore. We expect several more miners will go up to the mine in the coming week, when we hope to increase the output to about 100 tons, that is if the weather continues fine. Our stoppes continue to be as productive as ever in all parts of the lode. There have been no snow storms lately, but we have had a great deal of frost, which has prevented in a great measure the continuation of the building of the crusher house. The masons, however, have been employed in building the walls, which are necessary for the upper dressing floors, paving, &c. Here Lagon and his men are making good progress. Our foreman smith has finished sufficient axles for about 30 wagons in all, and is now employed in making miners' mallets, &c. The cartwheels are turning out one wagon per week, with the exception of blinding the wheels. There are now finished in all 17 wagons. Total ore raised to date 1045 tons.

**PITANQUI (Gold).**—Mr. T. S. Treloar (Dec. 16) reports that satisfactory progress continued to be made in the side level No. 2. The water had got back to the adit again, close to the entrance of the right-hand lode, which is nearly full of mud, sand, and clay from the last outbreak, but for the past month no more stuff had been brought down; in fact, the water was now perfectly clear, and if anything not quite so much, although some heavy rains had fallen within the last three or four weeks.—The mine captain reports as follows for November:—Adit in the early part of the month we did our best to go ahead with the adit, but soon after we removed the breasting poles the water began to increase, bringing with it, as before, a quantity of sand and slime. By great trouble we succeeded in putting in one set of timbers. The broken timber from the last crush having to be cut out, and the water and mud increasing, we could not make any progress. We then breastst up this level, cleaned out the small one, finding three sets of timbers there split near the end by the force of the water and the heaviness of the ground. Three reprieve sets were soon put in, and we commenced work again, when the water burst out once more, bringing a great deal of sand, slime, and jaggings with it. We then breastst up the level back to the mouth, and on the 15th commenced another level on the left-hand side, 34 ft. behind the breasting. This level has been driven 5 fms. south before making a turn, in order to keep off from the crushed ground in the adit. This level has been extended 5 fms. 3 ft., and timbered with square-edged logs, and sets 2½ ft. apart. Timbering the level above has been fourteen sets of timber put in this month.—Nine in the left-hand level, two sets in the adit, and three reprieve sets in the right-hand level.

**NEW ZEALAND KAPANGA.**—James Thomas, Dec. 9: During the past four weeks the 6' has been driven north on the course of the lode 2 fms.; the distance driven from No. 2 winze 7 fms. The south end driven 1 fm.; total distance 8 fms. The north back of the 6' has been stopped 8 fms. long by 1 fm. high. The lode in the stope and end varies in size from 2 to 4 ft. wide, producing at times rich specimens of quartz, stuff from 1 to 2 ozs. of gold to the pound weight of stone. The general lode stuff crushed monthly yields 15 ozs. gold to the ton—South Stope: The stope above the 60, south of lode 15 fms. high, has been stopped 2 fms. long by 4 fms. high; the lode here averages about 2 ft. wide, occasionally producing rich specimens, and good crushing lode stuff of the same character and yield as the lode at the 67, above described. The 60 end north has been driven on the course of the lode 2 fms.; distance driven north of sump winze, 60 fms. 2 ft. The lode here is at present squeezed; it consists of a seam of flocon, black, with fine mudde, carrying fine gold in small quantities. After the first week of the month I removed the men from this end and the counter leader for a few weeks to drive on the 50 end south of the main cross-cut, 50 fms. south of sets 2½ ft. apart, cased, deepened, and cleared out, and the waste pile hauled from the main cross-cut. New ground driven 2 fms.; length driven from cross-cut 12 fathoms. This end has to be driven forward, so as to lay open the ground for the south stope's convenience; by so doing a good block of ground will be laid open where we have met with the best prospects.—Crushing: In consequence of a breakage in the stamps during the middle of the month stopping the crushing operations we were unable to get but 15 tons of quartz put through; some teeth of the driving spur and pinion wheels suddenly snapped off. The breakage being repaired with all possible speed, and I hope to save the stamps at work again for a fortnight from this date, I have sent the 60 end stuff off to crush from the mill. The 60 end, 8 tons, yielding 13 ozs., and 41 lbs. of specimens, yielding 45 ozs. gold. From south stope quartz crushed 7 tons, yielding 10 ozs., and 15 lbs. specimens yielding 17 ozs. gold; total quantity of quartz crushed 16 tons, specimens 55 lbs. producing 85 ozs. of melted gold. The total number of hands at present employed are 38.

**PESTARENA UNITED (Gold).**—Jan. 18: District Pestarena: It is pleasing to report that a fair amount of work is being done towards pumping the water out from Peschiera Mine, and all going well; it is hoped to drain the 55 this month. A surface and ends are being made in No. 2, which will also give access to the 55. The 55 and the 100 are the lodes which has fallen off very much in the Anza river. At present the eight mi in No. 2 mill department only are working.—District Val Toppa: In the end north of No. 1 cross-cut west, in No. 3 level, there is slight improvement in the size of the lode. In the stopes on the flat lode under No. 2 level, and south of No. 4 cross-cut, there is a considerable improvement. All other points not mentioned are much the same as when last reported on the 7th. At the establishment of work are working regularly 20 mills.

## THE WEEK.

**SATURDAY, JAN. 18.**—Brighton, A., continued their downward course. At the opening they were dealt in at 122, but closed at 120½. Egyptian United receded to 50, and the Preference to 71½. The American market was again active. Pennsylvania shares fetched 35½, Erie (Second), 77. In the mining market business was chiefly centred in Don Pedro, which left off at a further rise.

**MONDAY.**—The Great Eastern dividend is to be 2½ per cent. Last week it was 2¼. The stock fell ¾ to 10½. Brighton rose hardly at all, and ultimately sympathized to 118. Chatham Preference also gave way 1½ to 8½%. Don Pedro ¾ to 1½. Lanark ¾ to 1½. Roman Gravel, 6½ to 7. Tankerville, 2½ to 3½. West Oliverton, 5½ to 7. Leadhills, 2½. Eberhardt, 3½ to 4.

**TUESDAY.**—Erie (second) continue their upward course, and have now reached 78. Brighton, A., fell again below 118, after which a rally set in, and in a surprising short time the stock was selling at 119½. Hudson Bay shares have been in request for several days past, and are now close upon 13. Many expect them to go higher. They were below 11½ when they were sold at such a price. The Richmond fell below 100. Every market was irregular, though closing fairly firm. No firm selling of Richmonds was attempted, the closing price being at 107. Oliverton was forced down to 48½, but almost directly afterwards recovered to 49½. Dover and Brighton A., after falling 1 per cent., left off without much change. There was a very firm market for all Erie securities. The 2nd closed at 80. By many still higher price is expected.

**THURSDAY.**—Erie Second reached over 81; the report reached the hands of the public this morning, and shows a very encouraging prospect for the present. A dividend of 3¢. per share and interest of 2¢. per share on the Erie Canal Company, and similar dividends on the Erie Railroad, Erie Harbor, and Erie Dock Companies, and the Australian Copper, 7½ to 1½; Nanty-Glyn, 15 to 20; Cumberland, A. 8 to 10; Pelissal, 3½ to 4½; City Officers, 11½ to 12½; Elsy Brothers, 3½ to 5½; Imperial Credit, 7½ to 7½; Liebeck, 31½ to 3½; Miner's Safe, 7½ to 8; National Safe 3½ to 4½.

**FRIDAY (Opening).**—Erie securities are again in strong demand at a further advance: the shares are 26 to 26½, and the seconds 83¼ to 83½; Unified 4½ to 46½ to 49½; Dover, A., fallen ¾ (117½ to 117½). London and County Bank shares have receded 1; Richmond, 98½ to 97½; West Oliverton, 5½ to 7; Leadhills, 1 to 1½; Pateley Bridge, 3½ to 4½; Wemyss, 10 to 11; Wemyss, 10 to 11; Discount houses are down to 3½, the usual price being over 4; the shares are 1 each, with 6d. paid.—Two o'clock.—The 26th report of the directors of the Phillips Mining Company has been issued in anticipation of the meeting, to be held on Thursday next, and is a very satisfactory one. The tribute system has continued to work steadily and satisfactorily, and the directors are enabled to declare a second dividend for the year of 1s. per share. At the present price of the shares (10s. to 12s. 6d.) the return to investors is, consequently, over 15 per cent. There is a reserve fund of £25,000, the whole of the rise shown at the opening. Down only 45½ to 43½. Mining is dull. An active business is being done in Eberhardt, Port Phillip, and Don Pedro.—Four o'clock.—Erie closes somewhat easier, on receipt of lower prices from New York. Consols leave off ¼ lower, and Calcutta stock



Royal Oak, Kapanga, Eureka, and others are on good gold, while the Corby and Tokatea have improved yields, and bid fair to have a run of prosperity. The Corby, Golden Pan, and Tokatea are all looking well; the latter has just lodged 205 oz. of gold as the result of a crushing of 72 tons of stone. The prospects for the present blocky month are equally good, and we should not be surprised if the present blocky month is reported to be a good harvest. The Kapanga Company's mine is ground to be looking remarkably well, and good stone is frequently won from the low level. On Dec 6 about 180 lbs. of rich stone were taken out, leaving prospects in the face for another good haul. The Eureka and Clunies are working upon the new leader latterly discovered on the surface. On several occasions parcels of choice stones have come to hand, which hold out inducement that it will prove a very valuable lode. A trial crushing will shortly be made, the result of which will be looked forward to by the adjoining mines, who will endure the strike of the lode, and who are only waiting for a tangible show ere they undertake operations to secure it. In addition to the foregoing, there are the Premier, Congress, Bismarck, and others that are engaged in permanent works, such as sinking shafts, or the formation of new levels, and as most of these will be completed early in the new year there is every confidence in the future, and it is trusted that the dark cloud which has overhung the Coromandel Mines for so long a time will give way to a brighter era.

### The Mining Market: Prices of Metals, Ores, &c.

**TIN.**—The quotations for tin appear to be rather on the decline, purchases having been made as low as 59*l*. 10*s*. per ton for prompt cash. These low prices have been chiefly caused by certain operators who were the great support of the market having in a great measure discontinued their support and allowed prices to drop, together with the endeavours that have been set forward by those who were against a rise. There is extreme quietude in the market just now, and it is impossible to say whether the minimum has yet been reached. The statistics for the month of January will now shortly be published, and should they turn out favourable some recovery may be fairly looked for; but if, on the other hand, they should show that the stocks have increased, it is not at all improbable but that tin may be once again less in value than it is at the present time. But a good substantial rise in this metal would, however, be most appreciable just now to holders, for there are many who still retain a large stock which cost considerably over the present market value, and they are consequently unable to realise without serious loss. It is, however, a question whether it is a question of mere speculation for those holders who are deeply interested in the future welfare of the tin market whether it would not be politic to increase their holdings at the present low value, that by so doing they would impart a stronger tone to the market.

QUICKSILVER was reduced on Monday to 6l. 5s., and a moderate business has passed thereat. California is unchanged.

Dolcoath are nominally 23 to 25; Cook's Kitchen, 1 to 1½; Car  
Brea, 28 to 30; Tincroft, 7½ to 8½. Wheal Peavor, 6 to 6½; the  
points in operation here are valued at 293½ per fathom, and the  
mine generally is looking well. South Frances have been in good  
demand, and leave off at 63 to 74. East Pool, 84 to 8½. Penstruthal  
2s. to 4s. South Condurow, 104 to 11; West Basset, 13 to 24; West  
Frances, 2 to 24; Wheal Azar, 34 to 4; Wheal Grenville, 14 to 2.

rectors have declared a dividend of 3s. per share. Devon Great Consols, 1½ to 1½; the sale of ore, 875 tons, realised 1536g. 12s. South Caradon, 50 to 60; 420 tons here realised 2107g. 11s. 6d. Marke Valley, 7s. 6d. to 12s. 6d.; 330 tons here realised 953g. 17s. West Seton, 6 to 8; the debt to the Cornish Bank here is 3000g. The agent reports that the 165 level has improved, and worth 3 tons of copper ore per fathom. West Tolgus, 34 to 36; the agent hopes to sample 300 tons of ore this week. Wheal Crebor, 10s. to 12s. 6d., the 120 east is 2 ft. wide, and improving. The 108 is worth 8g. per fathom. Parys Mountain, 4s. to 6s.; Morfa Du 17s. 6d. to 20s.

LEAD SHARES continue dull, and with mere nominal quotations. At the mines the severe weather is putting a stop to all dressing operations, and will be felt in diminished returns for some time, though costs go on. Roman Gravel, 6¢ to 7¢; the 110, north of shaft, is worth 2½ tons lead ore per fathom; 110 south, stones of ore; 95 south, worth 2½ tons per fathom, and improving. Owing to the weather, only cyan orestuff can be dressed.

Tankerville, 24 to 24; the 206 east is worth 3 tons of ore per fm. The seven slopes in back of the 206 east are worth in the aggregate 13½ tons of lead ore per fathom. Van, 16 to 17; Great Laxey, 16 to 17; East Van, 1½ to 1½; Glenroy, 7s. 6d. to 12s. 6d.; Leadhills, 1½ to 2; Pateley Bridge, 15s. to 25s.; Rookhope, 2s. 6d. to 7s. 6d. South Roman Gravels, 2s. 6d. to 5s.; West Chiverton, 7s. 6d. to 12s. 6d.; D'Eresby Mountain, 30 to 40; Aberllyn, 10 to 12; Clementina, 1 to 1½; Bettws-y-Coed, 1½ to 1½; Caron, 1½ to 2½; Frawgoch 2 to 2½; Grogwinion, 1½ to 2½; Hartington Moor, 1½ to 2; Mawston 1½ to 2; Red Rock, 1½ to 2½; West Wye Valley, 1½ to 2; Wye Valley, 1½ to 2; West Pateley, 1½ to 2½.

**FOREIGN MRS.**—Cape Copper, 29 to 30; Colorado, 1½ to 1½; Birdseye, ½ to ½; Chontales, 7s. 6d. to 12s. 6d.; Don Pedro, 19s. to 21s.; Eberhardt, 3s. 4 to 4; Emma, 2s. 6d. to 5s.; Exchequer, 2s. 6d. to 5s.; Flagstaff, ½ to ½. Port Phillip, 10s. 12s. 6d.; the directors have declared a dividend of 1s. per share, payable on March 1 making 2s., or 10 per cent. for the year. Frontino and Bolivia, 1 to 2½; I.X.L., 2s. to 4s.; Javali, 4s. to 6s.; New Zealand Kapanga, 7s. 6d. to 12s. 6d.; Last Chance, ½ to ½; New Quebec, 1s. to 1½; Panulcillo, ½ to 1. Richmonds have been flat, at 9s. to 9½. St. John de Rey, 250 to 260; Santa Barbara, 37s. 6d. to 42s. 6d.; Sweetland Creek, ½ to ½.

The Market for Mine Shares on the Stock Exchange has shown decided improvement in the amount of business done, although in many cases lower prices have had to be accepted. The transactions, moreover, are almost exclusively confined to foreign mines, even the name of a British mine being scarcely heard of. Mellanear has declared a dividend of 3s. per share, and the Port Phillip directors recommend 1s. dividend at the forthcoming meeting, making 10 per cent. for the year, or nearly 20 per cent. per annum on the present market price of the shares. The transactions to-day have included Cape Copper at 29½, 29½, 30, and 29½; Chontales at 10s.; Don Pedro at 1; Eberhardt and Aurora at an average of 3½; Frontino and Bolivia at 2½; Richmond at 9½, 9½, 9½, and 9½; Rio Tinto Spanish Coupon bonds at 58½; and St. John del Rey at 260 and 257. It is stated that the Mold Mines property is at last disposed of to a new company—the Gwernymynydd—and that, notwithstanding the peculiar difficulties of the times, the new concern has started with an excellent direction. It is considered that they have it extremely cheap, and that its prospects as a property will prove second to none in Wales, so that it will not fail to secure the appreciation of capitalists when it is brought formally into the market.

New Zealand Kapanga, \$ to £; the agent reports that the yield of gold from the quartz crushed continues good. The monthly summary to Dec. 9 from the Thames gold field gives the returns for the month from 44 companies' claims (including 600 ozs. sundries), 3990 ozs. 1 dw't, obtained from 2672 tons, which gives nearly 1½ oz of gold per ton of stuff treated. With regard to Coromandel New Zealand Herald says—For many months past the mines of the district have been under a cloud, and from their non-productiveness has resulted a depression of the local market. For ten or ten days, however, has imparted a little vitality into the breasts of the community, and fully exemplified the old adage "that it never rains but it pours," or, in gold field parlance, our good find is scarcely recorded before another emerges. Such is the case now—

Port Phillip and Colonial, £ 5 to 5s; the directors' report, prepared for presentation at the meeting on Thursday, shows that the tribute system has continued to work satisfactorily. The credit balance is 18,568*l.*, against 21,467*l.* last year. The reserve fund amounts to 6629*l.*, which has been removed from the Victorian 5 per cent. debentures, and is at present on deposit at the Imperial Bank pending its reinvestment. The balance on revenue account is 49*l.* 13*s.* 1*d.*, out of which the directors recommend a dividend of 1*s.* *per share*, payable March 1, which with the October dividend makes 10 per cent. *per annum*, and leaves 26*l.* 13*s.* 1*d.* to carry forward. Victoria (London) Mining,  $\frac{1}{4}$  to  $\frac{1}{2}$ s; the investments in the company's books are—South Africa, 12,000*l.*; China, 10,000*l.*; Melbourne, 300*l.*; Prince of Wales, 1867*l.* 4*s.* 6*d.*; and the total value of the investments is 23,158*l.* 4*s.* 6*d.*—8177*l.* 18*s.* 6*d.* The dividends received during the year were 2,125*l.* 14*s.* 6*d.*—14 per cent. *per annum*. The expenses in Victoria and London were 2,135*l.* 10*s.* 10*d.* and there is a cash balance of 937*l.* 5*s.* 1*d.* The profits were divided to the end of 1877. The directors regret that they are unable to recommend a dividend. The prospects are considered good.

The disreputable transactions connected with the promotion and launching of "The Gold Company," which transactions correspond but too closely with those which take place in connection with almost every company floated within the last 10 or 15 years, explain why at the present time no capitalist with ordinary common sense, or with any knowledge of business, will connect themselves with newly projected joint-stock companies. The parties incupulated in this instance are Messrs. Joseph Aspinall, James Walker, Richard Attenborough, Matthews, Wilson, Milford, and Vickers, who to judge from the observations of Lords Justices James, Baggallay, and Bramwell appear to have placed themselves only just outside the category of misdoers. Lord Justice James said that although he could not say there was any actual fraud proved yet he thought the transactions were such as were likely to lead to fraud, and he agreed with the Vice-Chancellor in expressing his strong disapprobation of such machinery involving business which might lead to the commission of fraud upon those unwary persons in the stock market who might have been induced to buy shares. Lord Justice Baggallay concurred, and Lord Justice Bramwell said, it was almost impossible to believe that the eleventh clause in the Articles of Association was not put in for a fraudulent purpose, and his lordship was by no means clear that if the persons named were indicted for conspiracy they would not be convicted and punished for it. At a meeting four days after incorporation the persons named were elected directors for four years, and when only 2375 (out of the 100,000) shares had been taken up 18,750 free shares were allotted to the then holders of shares for advances and expenses, 18,000 free shares were allotted to the promoters, Aspinall, the principal, and his mother, and 138,000 shares were allotted to the promoters, directors, and their friends, making 22,625 free shares and 2375 ordinary shares afloat. Subsequently the remaining 75,000 appear to have been also issued as free shares. The concern, of course, failed, and then, as if to prevent such questionable proceedings coming to light, a voluntary winding up was resolved upon, and the secretary appointed liquidator. One of "ye outside fools" who had purchased 100 shares from one in the "ring" at 9d. premium naturally objected to be so shamefully victimised, and sought to have the winding up taken into the court, which, however, a legal technically pretence of "retention of title" by the promoters and the conspirators connected with numerous other concerns at present on the market, was discredited, it may bring about a more healthy state of business, and do ming enterprise a permanent service, though some of those who are now regarded as respectable would come badly through the ordeal.

The Electric Light appears to have turned the heads of some people as it will, no doubt, turn out the pockets of many before they have done with it. Amongst those upon whom the former effect has been produced is one Thomas Hawksley, who, whatever he may have done to entitle himself to the "M.D.," has certainly not profited by the maxim, *ne auctor ultra credidam*. After hearing Prof. Tyndall's lecture at the Royal Institution, and seeing Mr. William Ladd produce a light at a cost of about 2s. or 2s. 6d. per minute, by bringing pure iridium to a white heat with a Farmer Wallace machine, using a great many horse power, this Dr. Thomas Hawksley suggests (though, of course, it is a suggestion) that the electric light should be used in miners' lamp, but in an inestimably more costly form than it was used 10 or 12 years ago. It would be unreasonable to expect Dr. Hawksley to visit the interior of a mine, but he might test his suggestion to use mirrors to turn the electric light round awkward corners by extinguishing the gaslights throughout his house in Grosvenor-street, placing an electric light in his coal cellar, and entertaining a dinner party late in the evening in his dining room, cheering them by such reduced lighting as might be obtained by his proposed arrangement. But, if the doctor has as profound in his knowledge of medicine as in that of light, his patients, while they last, are to be pitied. His amusing letter will be found in another column.

Canadian gold mining has more than once been referred to as an attractive field for British enterprise, and there appears to be now something tangible to work upon. Dr. Laframigne, of the University of Laval, Quebec, describes a nugget of pure gold weighing 38 ozs. lately found in the gold mine worked by Messrs. Saintrouge and Co., in Beauce county, near Quebec. The mines are said to be very rich, two weeks work having furnished 1000 lbs. of gold. The men employed in the mine are, however, described as of the most primitive character. The gold is found in boulder clay underlying glacial drift, also in quartz accompanying the clay, but not in large quantities.

St. John del Rey, 255 to 265; the latest telegram from Morro Velho, dated Rio de Janeiro, Jan. 23, states that the produce for the first division (11 days) of January was 12,500 oits, of the value of 4848\$, the ley of the ore being 61 oits. per ton. The profit for December was 6200\$. Don Pedro North del Rey,  $\frac{3}{4}$  to  $1\frac{1}{4}$ ; under date Dec. 24, Capt. Virvan reports that in the different points of operation fairly good progress has been made. Stopping in No. 8 old shoot below the 35 has been carried on comparatively on a small scale, being only one short stop just over No. 3. This point shows a great improvement in the average of the general work.

Rienchen, 39, 30 107; the usual weekly telegram from the mine at Eureka, Nevada, states that the week's run was \$18,000, from 317 tons of ore. "One furnace started on Saturday, the third this (Monday) morning." During the week the refinery produced \$30,000. The directors assume "from the telegram that one furnace has been running all the week, that one of the blocked furnaces was re-started on Saturday, and the other yesterday." The manager's report (Jan. 2) states that the 1000 ft. level has been drifted 18 ft. in a westerly direction on the quartzite, and the present end shows very good indications for ore. All the machinery is in good working order. The furnaces are doing much better work the last few days, smelting over 50 tons daily each, which he expects to increase to over 60 tons in a few days.

With regard to the Comstock mines it is stated that preparations are now under way for opening new levels in the Ophir, Sierra Nevada, Belcher, Yellow Jacket, and Crown Point Mines, which can hardly be completed in less than three or four months to come. All along the line of the Comstock preparations for prospecting the vein at still greater depths are being made. The old machinery of the hoisting works of six, eight, and ten years ago, calculated to prospect the lode to a depth of 1000, 1500, and 2000 ft., is being torn out, and replaced by new and improved kinds, intended to reach a depth of from 2500 to 5000 ft. At the 2200 level of the Ophir a station has just been completed, and a cross-cut started to prospect the ore vein. At the North Comstock, Virginia, the immense preparations are being made, and immense machinery being put in, both for hoisting and pumping. The pump in the new shaft of the Gould and Curry will be ready to start up in a day or two more, when it is confidently believed they will make short work of the pocket of water recently struck. The bonanzas continue their usual yield of ore. Colorado Union, 1½ to 1½; the directors offer some observations, which will be found in another column, upon the adverse statements concerning the company published last week.

Lead mine shares have attracted but little attention, and prices remain without material alteration. It is generally considered that the prospects of the lead market are better than those of the tin or copper markets, and hence the better feeling with regard to them. Van, 16 to 17; the 105 west is worth 3 tons of lead ore per cubic fathom. The 90 west is also equally as good. Other parts unchanged. The frost sadly interferes with the surface work.

**Mineral Corporation of Great Britain, 10 to 11 ;** the manager's report shows that operations have now been commenced at a third mine—the Bryn Canadon—where they are now clearing up the old workings. The London representative of the French capitalists working these properties has been down and inspected the mines, and is well satisfied with the progress that has been made since the Corporation commenced operations. A total of about 3 cent. of the share is paid to-day. The development of the Hafna and Great D'Eresby Mines is going on as well and quickly as could be desired. As no question is raised as to the mineral wealth of the district, it is not unnaturally urged in favour of the Mineral Corporation that if single mines can afford to pay the fixed charges of management, directors, and so on, a concern working many adjacent mines should be able to do so. The No. 1 adit at Hafna is looking better and better, and is becoming reduced proportionately. The No. 4 adit at Hafna is leading better than for some time past.

Grogwinion,  $1\frac{1}{2}$  to  $2\frac{1}{4}$ ; the frost has again stopped dressing operations. Mine is still improving. Frongoch, 2 to  $2\frac{1}{2}$ ; the four monthly meeting was held on Wednesday, and is reported in another column. Caron,  $1\frac{1}{2}$  to  $2\frac{1}{2}$ ; prospects are steadily improving. Red Rock,  $1\frac{1}{2}$  to  $2\frac{1}{4}$ ; the mine is looking well, and a green

**REMARKS.**—There is no new feature at present to be noted in the state of our markets, and there has been little to unsettle them during the past week, excepting, perhaps, a few unprincipled and disgraceful rumours circulated in regard to the position of a certain bank, and which have since been proved totally unfounded. As there has been already so much curtailment in the expenses of the general management of business, and the strictest economy so thoroughly exercised in every branch of commerce, and old liabilities to a great extent are run off, and everything now carried out on a safer and more judicious system than formerly, we may be said to be fortified for the general improvement on which a business is taking place. As regards the value of metals, we have repeatedly stated that it is next to an impossibility that any further material decline can take place, and now all that is left to be done is to confirm these remarks, and to urge upon the immediate consideration of buyers the advantages to them attending extensive purchases at the present time. There can be little doubt but that sellers will refuse to accept these low prices as soon as any extra demand appears, and that the only way in which the market price of metals may be brought about very speedily, and that in much less time than can be foreseen at present. Buyers, therefore, should not display dilatoriness in effecting purchases, for by so doing they are running an exceedingly great risk, for when once prices begin to take a turn they may make more rapid advances than is generally anticipated, and thus place buyers in a less satisfactory position, and give them cause to regret for not having placed their contracts in good time. Hence, it is at most to be said, it would seem that there is no likelihood of quotations advancing steadily than otherwise, as the state of business does not warrant the expectation of any particular sudden increase in the demand yet awhile.

It is not unfrequently the case, that the majority of buyers abstain from operating until a few, bolder than their fellows, make a start and gain the first picking, by which time, consumers becoming accustomed to the higher prices, follow up the markets. But those who would derive the full benefit of cheap prices would do well to increase rather than diminish their holdings, as the inevitable rebound must wipe out the gains, and the larger the investments at low prices so much will be the proportionate amount of profit at higher prices. The cheaper money will enable holders to carry on at a comparatively small cost, and will greatly tend to assist an upward movement, and a plethora of money will lead to more extended credit, and enable many new undertakings to be proceeded with which are now held in abeyance in consequence of the general feeling of distrust and the hoarding of resources. The great era which has recently been so prudently observed must necessarily produce a healthy state of things, and future prospects will undoubtedly be favourably influenced thereby. There was no alternative but to Buy. Bank rates are low, and the Government has offered the easiest rates in the open market, good bills having been discounted at an average of 2½ per cent. as the prospects of the money market are downward. There being comparatively little demand for trade purposes, there is little doubt but that in the course of another week or so the Bank rate will be further reduced, and that it will ultimately decline to 2 per cent.

**COPPER.**—The metal has only undergone very slight variations, and the demand still continues very limited. Prices, however, are greatly in favour of buyers, who should not hesitate in taking advantage of them while they continue so low. Chili bars have been bought during the week chiefly at about 56½ ls. to 57½ per ton cash, at which price some fair sales have been made. The Wallaroo sale is fixed for Tuesday next, when 503 tons will be offered by public auction, and the market is expected to become more active after the sale. Present quotation for Wallaroo is 68½, and for Burra 64½ per ton, but the latter is somewhat nominal, as no fixed price can be quoted until after the sale is over, and the result made known. The quantity of Wallaroo is 224 tons over and above that offered last November. The prices that will be realised next Tuesday can hardly be expected to be satisfactory to sellers, owing to the present dull state of business. Yellow metal and copper sheets are still offering on the market at exceedingly low prices, and a moderate number of contracts have been passed, though perhaps not so many as the low prices might lead one to look for, yet an increased demand may be met from the Indian exchange, especially if the rupee and the Indian is our greatest market for these descriptions the rate of exchange must necessarily affect the demand very considerably.

IRON.—The iron market keeps dull, and quotations continue low, but fairly steady. There appears at present to be no sign of any immediate improvement taking place, but time perhaps may eventually bring forth a revival, and the ironmasters may once again have their books plentifully filled with orders. But just now the time of improvement seems to be anything but near, for according to the various daily reports there is great slackness at the several mills throughout the country, which causes much suffering and distress among the working classes. A heavy failure in this trade was announced last Saturday from Middlesbrough, the Standard Iron and Steel Co. (Limited) ; this stoppage of payment has made little or no difference as regards the price of iron, and it tends to confirm the idea that the values of all descriptions are so low that there is little or no chance of their receding any further. The great distress now prevailing appears to be bringing some men back to reason, for apparently there are several who are glad, and even eager, to return to their work, though it be for less pay. But now, unluckily for them, it is not so easy for them to return to their employment ; for, on account of the few orders that are given out, masters and workmen are both in a tight place. In the case of the latter, the workmen, therefore, who are now put in this plight must see the folly of their previously refusing to work, for if they are not already placed in a state of utter destitution, there is but little chance of their escaping from it sooner or later. These privations ought to be sufficient warning to others who are still holding aloof, and are out on strike, as they show much plainer than words ever could express what must be the result of such utter folly. The market at Sheffield is reported as being of rather a fluctuating character, and it is expected that although it will be some time before the iron trade is able to shake off the Sufferer, at present, the greatest depth of depression has not yet been touched. It is also thought the men will not only have to accept reduced pay, but will also have to work longer hours. A strong resistance, however, is expected to take place when the announcement is laid before the employed.

A downward tendency in prices is only too observable at Middlesbrough, and business in pig-iron is reported as being most slack. Buyers appear to be very timid in coming forward, as they are merely purchasing sufficient quantities to meet their immediate requirements. No. 3 is quoted at 34s., though most makers ask 6d. per ton more. Forge iron is so dull of sale that even less than 36s. 6d. has to be accepted to effect sales. The manufactured trade is also very dull, though no difference is observed in the prices of the various descriptions. At the Yorkshire iron at Leeds keeps quiet, and there is but a very restricted enquiry for such iron as is generally at this port. Most of the works are giving their men but four days' week employment. From Wales it is stated that no change in the position of the market there has taken place, extreme quietude being observed at all the works. The returns show that during last month Cardiff cleared 3882 tons of iron, compared with 4441 tons in the same month in the previous year. Newport 2211 tons, compared with 6426 tons, and Swansea, which cleared nothing in December, 1877, produced 1338 tons. The market at Wolverhampton keeps dull, and it is with difficulty that buyers can be found. Q. quotations continue without alteration, but it is stated that sellers have occasionally slightly given way to effect purchases. The warrant market at Glasgow shows rather an upward tendency; last Friday's price being 42s. 6s. or 3d. per ton higher than on the previous Tuesday. This



deal of ore has accumulated, which cannot be dressed while the frost continues. Wye Valley 1½ to 2; the mine continues to open out well. West Wye Valley, 1½ to 2; the prospects are improving. Lisburne Syndicate (fully paid) are quoted 18 to 15. Bately Bridge, ¾ to 1½; the 50 east, on Lake vein, is worth 35 cwt. lead ore per fathom. The mine sinking under this level still maintains its value—10 tons per fathom. No change elsewhere. West Pateley, 1½ to 2½; a considerable improvement is reported in one of the lodges in the shallow workings.

Subjoined are the closing quotations:—  
Ashton, ¾ to ¾; Devon Great Consols, par to ¾ prem.; East Caradon, ¾ to ¾; East Van, 1½ to 1½; Glenroy, ¾ to ¾; Glyn, ¾ to ¾; Great Laxey, 16 to 17; Leadhills, 1½ to 2½; Marke Valley, ¾ to ¾; Parys Mountain, ¾ to ¾; Pateley Bridge, ¾ to 1½; Penrith, 2s. to 4s.; Roman Gravel, 6½ to 7; Rookhope ¾ to ¾; Tankerville, 2½ to 2½; Tincroft, 7 to 9; Van, 16 to 17; West Oliverton, ¾ to ¾; West Pateley, 1½ to 2½; Wheal Crebor, ¾ to ¾; Wheal Grenville, 1½ to 2½; Almada and Rito, 1-16 to 3-16; Birdseye Creek, ¾ to ¾; Blue Tent, 2½ to 3; Cape Copper, 29 to 30; Cedar Creek, 1-16 to 3-16; Chontales, ¾ to ¾; Colorado United, 1½ to 1½; Don Pedro, 15-16 to 1-16; Eberhardt and Aurora, 3½ to 4½; Exchequer, ¾ to ¾; Flagstaff, ¾ to ¾; Frontino and Bolivia, 2 to 2½; Huitfall, 1 to 2; I.X.L., 3 to 3½; Javali, 4s. to 6s.; Kapanga, ¾ to ¾; Last Chance, ¾ to ¾; New Quebrada, 1½ to 1½; Pestarena, ¾ to ¾; Placerias, 2½ to 2½; Port Phillip, ¾ to ¾; Richmond Consolidated, 9½ to 9½; St. John del Rey, 250 to 260; Sierra Buttes, 1½ to 1½; South Aurora, ¾ to ¾; United Mexican, 2½ to 3.

At Truro Ticketing, on Thursday, 2182 tons of copper ore were sold, realising 6463s. 10s. The particulars of the sale were—Average standard, 86s. 9s.; average produce, 6s.; average price per ton, 2l. 19s.; quantity of fine copper, 144 tons 4 cwt. The following are the particulars:—  
Date. Tons. Standard. Produce. Per ton. Per unit. Ore copper.  
Dec. 19 2389 ..... 2 88 17 0 ..... 6 ¾ ..... 23 17 6 ..... 9s. 0d. .... 245 0 0  
Jan. 2 1219 ..... 83 14 0 ..... 7 ½ ..... 3 3 6 ..... 8 11 ½ ..... 44 17 6  
" 23 2182 ..... 86 9 0 ..... 6 ¾ ..... 2 19 0 ..... 8 11 ½ ..... 41 16 6  
Compared with the last sale, there has been no alteration in the standard.

At the Swansea Ticketing, on Tuesday, 1281 tons of copper ore were sold, realising 10,475s. 11s. 6d. The particulars of the sale were—Average standard for 9 per cent. produce, 74l. 19s.; average produce, 15½; average price per ton, 8l. 3s. 6d.; quantity of fine copper, 198 tons 12½ cwt. The following are the particulars of the two last sales:—  
Date. Tons. Standard. Produce. Per ton. Per unit. Ore copper.  
Dec. 31 ..... 1283 ..... 276 12 0 ..... 7 ½ ..... 2 3 15 5 ..... 10s. 1d. .... 250 8 4  
Jan. 21 ..... 1281 ..... 74 19 0 ..... 15 ½ ..... 3 3 6 ..... 10 6 ¾ ..... 52 14 9  
Compared with the last sale, the decline has been in the standard 17 13s., and in the price per ton of ore about 5s. 1d. The Betts Cove ore gave a produce of 5½, and realised 9s. 6d. per unit; Caveira, produce 8½, per unit 10s. 2½d.; Bogalho, produce 28, per unit 10s. 6½d. There will be no sale on Feb. 5.

The Master of the Rolls has appointed Mr. James Waddell official liquidator of the British Empire Horse Supply Association.

A petition for the winding-up of Shand and Company (Limited) is to be heard on Feb. 1.

An official liquidator is to be appointed to the Ruthwaite Barytes Company (Limited) on the 30th inst.

\* \* With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: The Ruin of British Manufacturers and Starving English Workmen by One-sided Free Trade; Our Eureka, Nevada, Correspondence (J. D. Power); Mining Notes from Utah (W. Brede Meyer); Colorado United Mining Company (H. J. Macneil, F. Andrews); Mining Market Notes (W. Gabbott); Some Foreign Mines; Coal Mining; and Colliery Management; Explosions in Coal Mines (T. Hawkey); the Lighting of Mines (G. J. Jee); Electric Light in Coal Mines (A. Bagot); Nitro Glycerine Compounds; Improvements in Smelting; Welsh Granite Quarries (E. Spargo); Cornish Mining, and its Prospects; Bell Vein Mine, Gwynnapp (R. Symons); Parys Mountain; Parys Mountain, and Morfa Du; Rhydd-Allyn; Mendip Mines, and Miners—Foreign Mining and Metallurgy, &c.

COAL IN SPAIN.—The Madrid, Saragossa, and Alicante Railway Company are about to commence the construction of a branch from Puerto Llano to Valdeparas. This branch is rendered necessary by the discovery of vast deposits of coal at Puerto Llano.

FRONGOCH.—The statutory meeting of this company was held on Wednesday, when the Chairman gave an account of the formation of the company and the alterations in the system of working which had been adopted under Mr. Kitto's management, from which it would appear that the use of steam-power will be abolished in about three months' time, and the large water-wheel used instead; that the new perpendicular shaft will be completed at about the same time, and the mine can then employ more than double the present number of tributaries at a very good profit. Ore sales will also commence at about the same period, and the general opinion is that the monthly rate of production, for which this mine has been so long celebrated, will be maintained, and very good profits realised even with ore at its present quotation. The directors are all practically acquainted with mine management, and have a considerable pecuniary interest in the success of the company.

HERODSFOT MINE.—This well-known mine, which with a capital of 8704l. has returned dividends amounting to 63,744l., and which, in spite of low prices, has hitherto paid costs, was on Thursday evening offered for sale as a going concern, at Webb's Hotel, Liskeard, by Mr. E. Spry, but there was practically no competition. The reserved price fixed by the committee was 2000l. The biddings, which were confined to those of Messrs. Seccombe and Waddington, commenced at 2250l., and it was ultimately knocked down to Mr. Waddington at 2005l., only 5l. above the reserved price. He is to take possession on Feb. 1.

MELLANEAR COPPER MINE.—The directors have declared a dividend of 3s. per share, payable on Feb. 8.

GWERNYWYNDYDD.—In reference to this sett Captain Absalom Francis, of Wrexham, writes—"The more I study this mine the more I am convinced of its greatness. It will develop into a Minera that was. There is one measure—the chert—in which the main lode has not been seen; that, No. 2 shaft will make available in its downward course long before the ore deposit in the flats is reached, and in this measure—the chert—I expect a rich mine separate and distinct from those in which large ore deposits have been actually discovered and left. It seems to be entirely overlooked by those who have reported on the mine, but I do not hesitate to say that it has been quite as productive as the lime rocks of Flintshire and Denbighshire.

It is satisfactory to learn that at the BELL VEAN MINE, in Gwynnapp, the cross-cut adit started for the purpose of opening up the rich Gobbins' lode gives indications of being about to intersect a strong copper lode, supposed to be that of the Wheal Comfort. Considerable interest is excited in the neighbourhood as to the result of these promising explorations.

THE EMMA MINE.—The Emma Mine at the date of the latest Utah advices had a prospecting force in the Bay City Tunnel level, following some encouraging indications, and important developments were daily expected. Small quantities of ore of 200 ozs. per ton have been recently found. Accurate information regarding the working of the mine is rather difficult to obtain, but enough is known to explode the "fault" theory advanced in a pamphlet written some time since. The ore now being found is directly under and not remote from the old workings. The upper works are being continued under a two years' lease by Mr. James Scrimgeour, who is getting large quantities of "fillings" for concentration in the summer. The works are to be put up at the mouth of the Bay City Tunnel.

DEPHOSPHORISING CLEVELAND IRON.—At Messrs. Stevenson, Jaques, and Co.'s Acklam Ironworks the Standard Iron and Steel Company, of London, have erected one of Smyth's patent refineries with the original intention of making refined iron, but, attracted by the experiments which were being made by Messrs. Thomas and Gilchrist with their lining at other places, the Standard Company arranged for the application of Thomas's process to their refinery, with the view of making steel of Cleveland iron by dephosphorising. The company consequently lined the refinery with magnesian limestone and "blue billy," &c., used by Mr. Thomas, and had three "blows" of molten iron supplied direct from the blast-furnaces at the Acklam Works. The phosphorus was reduced to 0.282 per cent.,

while the phosphoric acid in the slag was between 7 and 8 per cent. The lining of the furnace was injured, and in future bricks will be used of the material used as lining by Mr. Thomas, which will be specially manufactured at Ferryhill. It is the intention of the Standard Company, as soon as the percentage of phosphorus remaining in the iron is reduced to a point which will render the metal suitable for steel rails, to run it into ingots for rail mills. They will then be prepared to license the use of their patents. It is stated that one of these refineries is capable of producing as much iron as a Bessemer converter, while the cost of the plant is very much less than that of the Bessemer plant, owing to the low pressure of blast which is used. No expensive blowing-engines are required, such as are used in the Bessemer process. The pressure of blast used by the Standard Company process is only about 2½ lbs. to the square inch, and the heat is intensified by the use of a small quantity of petroleum atomised in a mass of coke through which the blast is passed.

PHOTOGRAPHY.—The third part, embracing the series of Abridgments of Specifications of Patents relating to Photography between the years 1867 and 1876, both inclusive, has just been issued (price 9d.), and is obtainable at the Commissioners of Patents, Sale Department, Curstons-street, Chancery-lane. The inventions included in the series are those connected with the art of copying designs, figures, or images by the chemical or actinic action of light upon surfaces prepared to receive that action. With respect to the printing of pictures obtained partly or wholly by photographic means, all successive process for transferring or copying such pictures, and all subsequent printing of copies of the same in permanent ink or colours, have been included. Such vast improvements in photographic processes have been made during the period to which the volume refers that many of the abridgments are interesting from the facilities which they afford of tracing the progress made; for example, the production of permanent photographs by means of photo-chromotypy, photo-electrotypy, photo-lithography, photo-stereotypy, and photo-zincography respectively alone form an instructive study, and various other series might be mentioned not less attractive.

INVENTORS' ALMANACK.—The new edition—that for 1879—of the office calendar, compiled for so many years by the late Mr. Michael Henry under this title, has just been issued, in the form of a handsome chromo-lithographed card, about 18 in. by 12, by his manager and successor, Mr. Ernest de Pass, of Fleet Chambers, Fleet-street. The border is made to illustrate the most important recent inventions, and embraces amongst other things excellent pictures of the Eclipse rock-drill, Hathorn's air-compressor, the Gramme machine, the phonograph, the Jablockhoff lamp, the Woolwich Infant, &c. The Almanack is well worthy a place in the inventor's or manufacturer's office.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Jan. 21—Fosdale	.....	120	£13 11 0	Quirk, Barton, and Co.

COPPER ORES.				
Sampled Jan. 15, and sold at the Royal Hotel, Truro, Jan. 23.				

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Devon Great Consols.	91	£1 3 6	South Caradon	50	£4 9 6
ditto	90	1 3 6	ditto	49	9 15 0
ditto	84	4 8 6	Marke Valley	66	3 0 6
ditto	82	1 5 0	ditto	67	2 11 6
ditto	80	1 4 0	ditto	65	2 8 6
ditto	79	1 4 0	ditto	62	3 9 6
ditto	72	1 6 0	ditto	61	3 7 0
ditto	70	1 7 6	ditto	49	2 10 0
ditto	63	1 5 6	Gunnislake (Clitters)	82	3 14 6
ditto	61	4 7 6	ditto	80	3 4 6
ditto	60	1 4 6	ditto	79	3 0 0
ditto	45	1 2 6	ditto	68	2 19 0
ditto	36	3 6 6	Glasgow Caradon	67	3 19 6
South Caradon	74	3 5 6	ditto	63	3 4 6
ditto	62	4 10 6	ditto	63	3 4 6
ditto	58	2 5 6	Bedford United	45	3 6 6
ditto	51	9 15 6	Wheal Calstock East	7	2 15 0
TOTAL PRODUCE.					
Devon Great Con.	875	£1539 12 0	Glasgow Caradon	196	£ 695 11 0
South Caradon	420	2107 11 6	Bedford United	45	149 12 6
Marke Valley	230	953 17 0	Wh. Calstock East	7	19 5 0
Gunnislake (Clit.)	309	1001 1 0			
Average standard	.....	£ 86 9 0	Average produce	.....	6 ¾
Average price per ton	.....	2182	Quantity of fine copper	144 tons 4 cwt.	
Quantity of ore	.....	2182	Amount of money	.....	£4593 10 0
LAST SALE.—Average standard	.....	£83 14 0	Average produce	.....	7 ¾
Standard of corresponding sale last month	.....	£ 86 17 0	Produce	.....	6 ¾

\* \* The complete Ticketing will be published in next week's Journal.

COPPER ORES.									
Sampled Jan. 8, and sold at Swansea, Jan. 21.									
Mines. Tons. Produce. Price.					Mines. Tons. Produce. Price.				
Betta Cove	113	5½	£2	9 6	Caveira	73	8¾	£4	7 6
ditto	113	5½	2	9 6	ditto	73	8¾	4	8 0
ditto	112	5½	2	11 6	Bogalho	69	28	14	15 6
ditto	112	5½	2	10 6	ditto	68	28	14	15 6
Copper Reg.	95	30¾	16	16 0	Berehaven	99	9½	5	10 0
ditto	95	30¾	16	16 0	Telhadella	62	9¼	4	15 0
ditto	90	28½	12	6 0	Copper Pre.	39	59	31	16 6
Caveira	73	8¾	4	8 6	ditto	4	18¾	7	0 0
TOTAL PRODUCE.									
Betta Cove	450	£1127	15	0	Berehaven	90	£ 495	0	0
Copper Regul.	280	4301	7	6	Telhadella	62	294	10	0
Caveira	219	953	12	0	Copper Precept	43	1269	3	6
Bogalho	137	2024	3	6					

COMPANIES BY WHOM THE ORES WERE PURCHASED.		
Names.	Tons.	Amount.
Copper Miners' Company	507 ¾	£ 1,693 11 6
P. Grenfell and Sons	224	3,944 3 6
Nevill, Druce, and Co.	90	1,626 7 6
Vivian and Sons	90	495 0 0
Williams, Foster, and Co.	210	2,343 11 0
Mason and Elkington	75 ¾	186 9 0
Landore Copper Company	75 ¾	186 9 0
Total	1281	£10,475 11 6

TOTALS AND AVERAGES.				
Whole sale	21 cwt.	Produce.	Price.	Per unit.
1281	15 ½	£8 3 6	10s. 6d.	274 19 0

C. H. WALKER AND CO.,  
MINING AGENTS AND ENGINEERS,  
VALPARAISO AND SAN IAGO  
CHILE.

HENRY WIGGIN AND CO.  
(LATE EVANS AND ASKIN),  
NICKEL AND COBALT REFINERS  
BIRMINGHAM.

HORIZONTAL ENGINE.  
A STRONG, WELL-FINISHED ENGINE  
12½ inch cylinder, 2 feet stroke, with fly wheel, wrought  
crank shaft, 5 inch diameter, governor, and massive box bed.  
Price ... .. £76.

ALEXANDER SMITH,  
ENGINEER, DUDLEY.

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CONVERSATION ON MINES, &c., BETWEEN "A FATHER AND SON."  
By W. HOPKIN, Colliery Manager. 3s.; by post, 3s. 3d.  
NEW GUIDE TO THE IRON TRADE. By JAMES ROSE. Price 8s. 6d.; by  
post, 9s.  
JOINT STOCK COMPANIES, AND HOW TO FORM THEM. By THOMAS  
TAPPING. 1s.  
TREATISE ON IRON METALLURGY. By S. B. ROGERS. £1 8s.

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PURCHASERS OF  
LEAD ASHES, LEAD SLAGS, SULPHATE OF LEAD, HARD LEAD,  
BRASS SLAGS AND ASHES, COPPER REGULUS, MATTE, SCORIA,  
TIN ASHES, TERNE ASHES, &c., and MIXED ORES or REFUSE,  
containing LEAD, COPPER, TIN, or ANTIMONY.

GEO. G. BLACKWELL,  
5, CHAPEL STREET, LIVERPOOL,  
PURCHASER OF

MANGANESE, ARSENIC FLUOR-SPAR, WOLFRAM, BLENDE, CALA-  
MINE, CARBONATE and SULPHATE OF BARYTES, ANTIMONY ORE,  
CHROME ORE, MAGNESITE, EMERY STONE, PUMICE STONP  
OCHRES AND UMBERS, CHINA CLAY, LEAD ORE FOR POTTERS  
TALC, PHOSPHATE OF LIME, &c.

WALLAROO COPPER.

MESSRS. JAMES AND SHAKESPEARE beg to give notice  
that their NEXT SALE will take place on Tuesday, the  
28th inst., at Two P.M., at the Baltic Sale Room, Threadneedle-  
street, when they will OFFER SEVEN HUNDRED AND  
NINETY SEVEN TONS in CAKES, and FIVE TONS in  
INGOTS.

Catalogues may be obtained at their offices, 10, Austinfriars,  
E.C., London, and Slater-court, Castle-street, Liverpool; also of  
Mr. DUDLEY DOCKER, 38, Cannon-street, Birmingham.

BURRA BURRA COPPER—BRAND P.P.C.

MESSRS. FRY, JAMES, AND CO. beg to announce that  
their NEXT SALE will take place at the Baltic Sale  
Rooms, on Tuesday, 28th January, at Two P.M., when they will  
OFFER about ONE HUNDRED AND TWENTY TONS COP-  
PER in CAKES, and ONE HUNDRED TONS COPPER in  
INGOTS—TWO HUNDRED AND TWENTY TONS.

Catalogues of Messrs. FRY, JAMES, and Co., Brokers, Gresham  
House, E.C., London.

TO CONTRACTORS AND ROCK DRILL  
PROPRIETORS.

THE DIRECTORS of the NORTH HENBLAS MINING  
COMPANY (LIMITED) INVITE TENDERS for the  
SINKING of an ENGINE SHAFT at their MINE, situate  
near to HOLYWELL, FLINTSHIRE.

For particulars and specifications, apply to Mr. WILLIAM  
C. BEW, Colonial Buildings, 36, Dale-street, Liverpool.

ENOCH AND RICHARD PARRY.  
MINING AGENTS AND SURVEYORS,  
MINSTERLEY, SHROPSHIRE.

Mines inspected and reported on at home and abroad.

T. V. CLARKE AND CO.,  
TRUNDLEY LANE, SURREY CANAL,  
DEPTFORD, S.E.,  
ARE BUYERS OF

CALAMINE and BLENDE; ZINC and LEAD ASHES, SULPHATE OF  
LEAD, and OTHER METAL RESIDUES.

N.B.—Sole Manufacturers of the Palm Anti Friction Grease and Lubricating Oils  
for Collieries, Mines, &c.; also the Asphaltic Varnish Paint for coating outdoor  
Ironwork and Machinery.

W. M. ALLAN AND CO.,  
184, BUCHANAN STREET, GLASGOW,  
EXECUTE COMMISSIONS FOR THE PURCHASE AND SALE OF  
SCOTCH PIG-IRON WARRANTS.

Sole Agents in Scotland for—  
SPEAR AND JACKSON, Etna Steel Works, Sheffield; and  
JOHN SHAW, Yorkshire Wire Rope Works, Sheffield.

Steel and Steel Tools, Pig and Manufactured Iron, Hemp and Wire Ropes for  
all purposes, India-rubber Goods, and Furnishings of every description for Cel-  
leries, Foundries, Engineers, Saw-mills, &c.

Mr. REUBEN J. SLACK, C.E.,  
7, YORK BUILDINGS, CHARING CROSS  
LONDON, W.C.,  
ALL KINDS OF MINING MACHINERY SUPPLIED.

Mines carefully inspected and reported on.

Mr. SLACK, having recently inspected Killfrith, feels justified in saying he  
believes the shares may be bought at present with a fair chance of great fructi-  
fication.

Mr. E. JACKSON,  
Associate of the Royal School of Mines,  
ANALYST AND ASSAYER.

Assays or Complete Analyses made of Copper, Silver, Lead, Zinc, Tin, and  
other Ores.

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R. B. HARPER,  
MINING ENGINEER,

Will SUPERINTEND or EXAMINE and REPORT on MINES on the PACIFI  
COAST. Having had 14 years' experience in Gold and Silver Mining in Mexico,  
California, and Nevada. Government Mining Engineer for the Province of Bri-  
tish Columbia.  
Any communications may be addressed Room 49, Nevada Block, San Fran-  
cisco, California.

SOUTH CAMBRIAN MINING CO.  
(LIMITED).

Capital £50,000, in Shares of £1 each, fully paid up.  
NO FURTHER LIABILITY.

Since this company commenced operations in June last extraor-  
dinary progress has been made. For 65 fathoms in length a rich  
course of ore has been passed through, and the manager reports the  
last 10 fathoms will produce 5 tons per fathom of the richest blende  
in Cardiganshire, worth at present low prices £4 per ton.

Six men can open up 600 tons of ore per month.

It is calculated that not less than 5000 tons of ore are now broken  
and waiting for dressing machinery.

It is not only the opinion of Messrs. Thomas Brothers, of Liver-  
pool, but of other eminent mining authorities, that under this great  
mass of blende an equally rich deposit of lead ore exists.

The shares are at par, and are the cheapest in the market; they  
will command a high premium, and should be bought without delay  
as a splendid investment.

Applications should be made to Mr. A. J. W. STRINGER, Secretary  
at the registered offices of the company, 29, Byrom-street, Man-  
chester; or to Messrs. THOMAS BROTHERS, Strand Chambers, 5,  
Strand-street, Liverpool.

18 H.P. PORTABLE STEAM ENGINE, with link me ion  
reversing gear, ready for delivery; also gear to wind and pump.  
A 9-h.p. VERTICAL STEAM ENGINE, with link motion, reversing gear  
(winding drum if required).  
A 6-ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER, with  
carriage and travelling wheels.  
Apply to—  
BARROWS AND STEWART, ENGINEERS, DANBURY.



## Notices to Correspondents.

\* \* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

WELSH GRANITE QUARRIES.—The writer of the article in the Supplement to last week's Journal, headed as above, intended to state that the consumption of granite in London in 1871 was computed to be 650,000, not 6,500,000, tons. Another part, the word "refuge," reads "refuse." Your readers, however, would naturally think the latter a clerical error.

UNREGELMÄSSIGE UEBERSETZUNG.—"Dr. J. K." (Innsbruck).—Wenn unsere Journal nicht regelmässig kommt, so ist es nicht unsere Schuld, weil die Zeitung durch eine Buchhandlung bekommen; jedoch, senden Sie uns, gefälligst, das letzte Kreuzband, dann werden wir alles richtig machen.

FORING MACHINERY.—"C. B." (Berlin).—For boring tools to sink a hole 500 metres deep and from 0.3 to 0.1 diameter, "C. B." had better write to the Diamond Rock-Boring Company, Victoria-street, Westminster, London; and to Messrs. Mather and Platt, Salford Works, Manchester. There are few others who would supply tools, though many would undertake the work.

ROCK DRILLS.—We have a letter from Mr. Edwards to forward to "Civil Engineer," whose address we have mislaid. Will he send for it?

Received.—"S. B." (Millom): A letter addressed to this office will be forwarded—"M. W." (Paris): "Shareholder" (West Godolphin).—"W. W. M." (Middleborough): Any local bookseller will obtain the work for you—"Copper Ore" (Parys Mountain).—"H. C. S." (Aston).—"R. S." The letter on Cooking Accounts would subject us to an action for libel—"Mentor" should write to the address given—"Shareholder" (Wheat Grenville).—"Constant Reader" (Paris): We know of no means of obtaining such particulars—"N. E. R."

IMPORTANT NOTICE.—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the Mining Journal to many countries will be reduced to one fourth. Henceforth the subscription will be 11. 10s. 4d. per annum (39 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until cancelled:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxembourg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Serbia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 11. 19s. (50 frs.).

## THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, JANUARY 25, 1879.

## RAILWAY MATERIAL, AND STEEL AND IRON RAILS.

In connection with our iron and steel industries no greater interest is shown at the present time in any branch than that relating to every description of railway material, consequent on the many and marked changes that have taken place in its production during the last few years, and, in fact, are still going on. No greater revolution, indeed, has had to be recorded in our heavy manufactures than that of the superseding of iron by steel in the making of rails and other railway accessories, followed by a striking decrease in their prices. Steel not so very long since was more than double the price of iron as regards every description of railway requirements, but now the difference in the value of the two is comparatively insignificant. Of this we are strongly reminded in looking over the exports of railway iron for several years past, and from them we find that since 1870 there has not only been a large falling off in the quantity of iron sent out of the country, but a great decrease in the price as well; so that however high the profits of manufacturers may have been a few years ago they must have been decidedly infinitesimal during the last two years at least. But 1878 has undoubtedly been a very bad year, for the quantity of railway iron exported, as well as the values, were much lower than during any of the previous years. To a considerable extent this is due to the entire collapse of the American export trade in rails, and which appears to have entirely gone from us, for the high prices of 1871-2 evidently stimulated the American manufacturers, who gradually but surely beat us out of their markets, again proving, which we have frequently pointed out and illustrated by facts, that large profits and high wages are not always the unmixed blessings that many people suppose them to be. There may certainly be a present gain, but experience has shown that it is obtained by a heavy loss in the future; for we all know that the high prices of iron and coal in 1872 and the two following years not only unsettled the labour market, but led many persons to enter into those trades where such large profits were made that otherwise would not have done so. Increased power of production and greater competition have been the consequences, causing prices to come down below the paying point. That this has been the case is plainly shown by reference to the exports of railway iron during the last ten or eleven years, together with their values, as exhibited in the following table:—

Year.	Tons.	Value.	Per ton.
1863	583,488	£ 4,660,612	£ 7 19 9
1869	888,010	7,238,170	8 3 0
1870	1,059,392	8,756,552	8 5 3
1871	981,197	8,084,619	8 5 0
1872	945,420	10,225,492	10 16 3
1873	785,014	10,418,852	13 5 5
1874	782,437	9,629,820	12 6 3
1875	545,981	5,453,836	10 0 0
1876	414,656	3,700,105	8 2 6
1877	497,924	3,868,916	7 15 4
1878	441,386	3,306,226	7 9 7

The great falling off in the exports is evidently due to the stoppage of the American trade, which we appear to have altogether lost, for during the last three years the quantity of railway iron sent to the States was trifling; yet in 1871 we exported to America no less than 512,277 tons (more than the whole of our exports for 1878) of railway iron; in 1873 the quantity had fallen to 186,300 tons; in 1875 to 177,900 tons; and in 1878 to 922 tons. These figures show what a valuable customer we have lost, and that irrecoverably; and as we have before stated, unexceptionally high prices have been the main cause for this state of things. There is also another notable fact that should not be overlooked—low prices have not led to an increased demand, as is usually the case, for as is seen in the table, as our exports fell off year after year prices also went down *pari passu* with them. In connection with railway material it is satisfactory to find that the demand for Bessemer rails during the last few years has gone on increasing, but this has been at the expense of the iron rails which are going out of use, excepting for some few lines where the traffic is particularly light, and even on them the steel is undoubtedly the cheapest. This is admitted by the rail makers of the North of England and South Wales, for seeing that iron rails were fast dying out they altered their machinery and put down the necessary plant for the making of Bessemer and the rolling of it into rails. The growth of some of the old works has also been very rapid. In 1868 the Barrow Company—then, as now, the largest Bessemer establishment in the kingdom, or we may, we believe, say in the world—had 10 converters of 5 tons each, but now there are no less than 18 6-ton converters. The next in importance is the Mersey Steel and Ironworks, Liverpool, where there are 10 5-ton converters. BOLCKOW, VAUGHAN, and CO., at one time great iron rail makers, have now 4 8-ton converters going, whilst the latest addition to the number of Bessemer makers, the Rhymney Iron Company (Limited) have 2 8-ton converters, the Dowlais Company 6, with a capacity for turning out 18½ tons of steel. In 1868 there were 19 works in operation in different parts of the kingdom, having amongst them 57 converters, with a converting capacity of 72½ tons, whilst in 1877 there were 23 Bessemer establishments having 108 converters, with a capacity of 182 tons, so that the productive power in something like nine years has been nearly trebled. Sheffield and the neighbourhood where the steel rails were first made, and where the inventor has an establishment, is still the principal seat of the Bessemer rail trade, there being six works having 30 converters, with a converting capacity of 70½ tons.

As to iron rails Spain, Germany, and Italy appear to be the only places where there was any increase in the consumption during the last year, whilst the orders from the United States only amounted

to 485 tons. The decline from the countries that formerly were large purchasers of iron rails will be seen from the following table of the exports for the last three years:—

	1876.	1877.	1878.
Russia .....	12,625	4,237	1,313
Sweden and Norway ..	34,448	40,670	12,501
Spain .....	10,723	6,244	7,779
Italy .....	15,019	2,647	8,576
Brazil .....	16,029	20,466	6,042
British India .....	30,404	21,430	20,867
British North America.	21,839	6,704	4,286
Australia .....	13,946	48,181	26,099
Other countries .....	35,021	27,273	23,215

Total .....

1876.	190,054
1877.	177,852
1878.	110,678

It will be seen that the largest consumers—countries where railways are comparatively new as well as some older ones like Russia—have been taking less of our iron rails during the last two or three years, which may be attributed to the low price at which Bessemer rails are being sold, and the knowledge that they are by far the cheapest. It is true that iron rails are much cheaper than they were, but they have not come down so low, comparatively speaking, as those made of steel. However, as we have shown the decline in the consumption of iron rails in various countries, we now append the exports of those made of Bessemer, in which there has been an increase, bearing out our statement as to the dying out of the one and the certain increase in the consumption of the other. The exports of Bessemer rails for the last three years were as follows:—

	1876.	1877.	1878.
Russia .....	66,029	75,089	53,999
Sweden and Norway ..	3,928	18,001	9,183
Germany .....	12,943	21,363	34,238
Spain .....	6,279	12,539	16,914
Italy .....	2,027	5,454	9,174
Brazil .....	4,096	2,119	7,334
British North America.	36,247	27,990	26,742
British India .....	10,130	32,549	33,638
Australia .....	10,442	23,075	40,243
Other countries .....	21,633	12,244	18,267

Total .....

1876.	173,754
1877.	235,453
1878.	249,882

No Bessemer rails were sent to the United States during 1876, and last year the quantity was only 501 tons, whilst the falling off in the exports to Russia is no doubt owing to the disturbed financial state of that country, but the prospects for the ensuing year are more promising, as some good orders are said to be now in hand on Russian account. The value of our own colonies and possessions to our trade is fully shown by the fact that British North America, India, and Australia took from us last year no less than 100,673 tons of Bessemer rails, or more than two-fifths of the whole of our exports. In Germany there are nearly a dozen works engaged in the making of Bessemer rails, seven having been in operation in Prussia so far back as 1863, yet it will be seen that there has been a marked increase in our exports to that country, although the manufacturers there compete in several of the continental markets with our own, and have sold rails at prices lower than what they can be made for in England. Prices have come down considerably, however, during the last three or four years both as regards iron and steel rails, and this will be seen from the declared values furnished to the Board of Trade. For the last three years the prices were:—

IRON.			STEEL.		
Value.	Per ton.		Value.	Per ton.	
1876.....	£1,409,843	£ 7 7 8	£1,636,852	£ 9 8 5	
1877.....	1,160,172	6 10 4	1,936,391	8 4 6	
1878.....	677,497	6 2 5	1,856,430	7 8 7	

In December last, however, the declared value of the iron rails exported was only 51. 8s. per ton, and of Bessemer 61. 14s. per ton, but the actual price at the works is not much over 51. 5s. per ton. Referring again to ordinary iron material, it may be said that iron sleepers are now being introduced on some of our lines, and there is every appearance that they will ultimately come into general use, and thus find increased employment for our ironworkers.

## THREATENED STRIKE OF MINERS.

For some time past statements have appeared in the daily papers with respect to a threatened strike of miners in South Yorkshire and North Derbyshire, which was likely to result in throwing out of work from 80,000 to 100,000 men and boys. From the most reliable sources we are able to state that the reports that have appeared in many of the papers have been greatly exaggerated as to the number of persons that would be rendered idle in the event of a strike against a reduction of wages taking place. We, therefore, give the facts as they really are. The proposed reduction of 12½ per cent. on the wages of the miners was initiated by the Coalowners' Association, established about six years ago, with a nominal capital of 200,000, in 20,000 shares of 10l. each. The object was to give compensation to members in case of a strike or dispute by which their collieries would be set down. Each firm assured its profits at a certain rate, not being less than 1s. per ton nor exceeding 2s. 6d. In case of strike, restriction, or other cause which should subject any firm to loss either in expenses on strike or in loss of assured profits, certain sums are granted according to the amount of assurance entered into in the first instance. The claim has to be based on the assurance of the profits, as well as of all expenses actually incurred in maintaining a colliery during a strike in a current going condition. The members of the association at the present time number less than 30 persons, and at a meeting recently convened by the executive colliery owners it connected with it, were invited to be present to discuss the possibility of enforcing a general reduction of wages in South Yorkshire and North Derbyshire. Of course nearly all were agreed as to the necessity of reducing the miners' wages, seeing that heavy losses were incurred during last year in working many collieries. But there was this difference, that whilst the members of the Masters' Association would receive compensation in the event of their workmen striking, those that did not belong to it would have nothing to fall back upon. However, notices were given at about 25 collieries that a reduction of 12½ per cent. would be enforced. Of the 25 collieries, we believe less than a dozen belonged to the Coalowners' Association. The other gave notice for the purpose of securing any advantage that members of the Association might obtain from their workpeople, so as to have uniformity of wages, but, of course, with no intention of closing their collieries. On the contrary, many of them would be greatly advantaged by the setting down of some ten or a dozen collieries, for it would secure for them an increased trade, with higher prices for coal. It was anticipated that had not Mr. MUNDELLA, M.P., got the Masters' Association to accept arbitration not more than 8000 men and boys would have been on strike on the 15th inst., when the notices expired. As it is, an extension of time has been granted to the 29th inst., for the men to decide whether they will accept arbitration or not.

So far as can be ascertained, there is not more than one lodge connected with the Miners' Association that has shown the least willingness to discuss the question of arbitration, whilst some of them are strongly in favour of demanding an increase of wages. The miners of West Yorkshire, believing that if the wages of their fellows in the southern part of the Riding are reduced that theirs will also be pulled down, have taken the matter up very warmly. They have offered to make a levy of 2s. a man per week in support of the men who strike against the reduction, and this, of course, would amount to a considerable sum. The action taken by Mr. MUNDELLA, M.P., is loudly condemned by the men, who consider that but for his officiousness the notices given by their employers would be withdrawn. So far, therefore, from information obtained on the spot, we believe the men will refuse arbitration, and should the masters not withdraw the notices, will go out on strike. Many of the colliery owners, we may say, are opposed to the enforcing of any reduction whatever, considering the time unopportune, seeing that this is the busiest period of the year, and prices considerably higher than they were last summer and autumn. On the other hand, it is known that last year was a disastrous one for colliery owners, one large

firm in South Yorkshire, whose pits were worked with more than usual regularity, having lost some 6000l. or 7000l., whilst most others suffered, but, perhaps, not to such a serious extent.

The colliery owners we believe have tried hard not to come into collision with their workpeople on the wages question, but owing to their losses they have been forced to take the action they have done, for they cannot be expected to keep their collieries going for the benefit only of those they employ. Not so long since they endeavoured to obtain from the directors of the Great Northern Railway Company a reduction of the rate to London of 1s. per ton. This would have given some relief, seeing that in South Yorkshire alone there are some 60 colliery owners who do business with London. It does not all go by the Great Northern, but it was believed that a reduction of the rate by that line would be followed by a reduction by the others. In December last there was sent to the Metropolitan by the Great Northern 30,100 tons of coal; by the Midland, 13,300 tons; London, and North-Western, 9800 tons; and by the Great Eastern, 10,200 tons. Now a reduction in the rate of 1s. per ton upon the above quantities would have given relief to the colliery owners to the extent of 37,000l. for the year, and would in all probability have stayed off the reduction, for a time at least. But as the Great Northern would not agree to reduce the rates, although by so doing the company would have placed to its credit a much heavier tonnage of coal than has been sent over it for a long time from South Yorkshire, the colliery owners felt they had no other alternative but to ask their men to accept a reduction, so that the whole of the burden of loss should not fall on the one side only, but be borne by both. As this was refused nothing then was left but to endeavour to enforce the reduction or set their collieries down. The latter to several will be far more profitable than keeping them going. Unfortunately, in disputes of this kind women and children are greater sufferers than even the men are, and on their behalf hopes were entertained that some course would be found so as to prevent a strike. But the efforts made have evidently been fruitless, and there appears every probability that before another week elapses we shall see another of those struggles between labour and capital that have proved so disastrous to the working miners of the kingdom. But the past experience of strikes has taught no lesson to the sufferers, who look only to the present, believing that their employers will have to give way, and that, supported by the men in other districts, they will be able to make a successful fight. But it must be allowed that on this occasion they have received assurances of sympathy to a greater extent than in previous strikes, so that it is probable that the strike at a few of the collieries will be a long one.

## THE BLAENAVON WORKS.

It is with very great regret that we observe that political economy has broken down at Blaenavon. In fact, with all our boasted progress in education, civilisation, and what not, political economy appears to us to have broken down almost everywhere during the last five years. Another illustration has been afforded at Blaenavon of the sad fact that there is scarcely any community of feeling and interest between employer and employed in South Wales, that the South Wales working man is almost entirely regardless of any remuneration being secured to the capital which provides him with the necessities of life, and that he is almost equally regardless of the circumstances which are daily passing around him. It will be remembered that the fate of Blaenavon was to be decided yesterday week (Jan. 17). An interval of three weeks was allowed, in which an effort was to be made to induce the men employed at the works to show whether or no they were willing to support a scheme to enable the concern to be carried on by taking such wages as would admit of its being conducted without loss. The effort was made, but it met with an unsatisfactory response; the men declined to concur in a reduction of wages, and yesterday week Vice-Chancellor MALINS had only the painful alternative before him of ordering the Blaenavon Iron and Steel Company (Limited) to be wound-up compulsorily, and appointing Mr. MARTEN and Mr. WALLACE official liquidators.

There is something terribly wrong about our modern industrial system. We say there is something terribly wrong about it because, so far as the manufacture of iron is concerned, no one seems to thrive under it. Even in the days of the Romans iron making appears to have been carried on at Blaenavon, and the business which the company now about to be wound up took over was established so long since as 1793. The transfer was made to the company in May, 1870, and after the lapse of scarcely 8½ years the Blaenavon Iron and Steel Company has drifted into Chancery, after sustaining enormous losses, and is to be quietly interred under the auspices of that by no means inexperienced judicial undertaker—Vice-Chancellor MALINS. We say Vice-Chancellor MALINS is by no means inexperienced in the winding up business, and we may add that on the very same day on which he decided the fate of the Blaenavon Company he also ordered the tin-plate making concern known as T. W. Booker and Co. (Limited) to be wound up. If Blaenavon employs 5000 workpeople, T. W. Booker and Co. have also 1000 persons dependent upon them. T. W. Booker and Co. have had even a briefer career than the Blaenavon Company. The latter started upon its course in May, 1870, but T. W. Booker and Co. only date from 1873. In both cases heavy losses appear to have been sustained for a long time past, and absolute suspension seems to have been averted by temporary accommodation. Thus in 1873 Messrs. KENNARD and WARING advanced 59,400l. to keep the ball rolling at Blaenavon, while T. W. Booker and Co. borrowed no less than 600,000l. from the West of England and South Wales District Bank, and finally involved that important concern in the ruin which has overtaken so many firms and companies during the last twelve disastrous months.

When we see such facts as these passing before us we are forced to the conclusion that the limited liability company system is a mistake when applied to the manufacture of iron, especially in South Wales. It has failed just as signally as political economy has failed. Another conclusion which we are compelled perforce to adopt is that terrible mischief has been wrought among the South Wales working classes during the last ten years by the Trades Unions and the delegates. If iron is to be again manufactured at a profit in South Wales capitalists must resort to the personal trading system, and their workpeople must labour with docility for moderate wages.

THE LIABILITIES OF COLLIERY AGENTS.—The Staffordshire Potteries Stipendiary has decided that a colliery agent was not responsible for a neglect of duty beside the certified manager. Mr. Richard Forrester was summoned for a breach of the Mines Regulation Act at Weston Coyney Colliery, Longton, of which he was agent, the manager having been fined 20l. for the same offence. The summons was taken out at the instance of the Home Office. A case was granted.

EXPLOSION OF CARDIFF COAL ON A NEWCASTLE STEAMER.—The official enquiry at Liverpool into an explosion of coal gas on board a Newcastle steamer was concluded on Wednesday. The Commissioner said there could be no doubt the vessel was not provided with proper means of ventilation, and no doubt, also, the master was responsible in proceeding to sea with her in that condition; but if any blame attached to him still greater blame lay with the owners, whose duty it was to have informed themselves of the best means of ventilating coal-carrying vessels, and of applying those means to their own ships. The engineer had certainly been guilty of negligence in leaving the lamp in the tunnel after he had discovered the presence of gas, but the Court did not think this amounted to more than an error of judgment. The certificates of the captain and chief engineer were then returned. The vessel was on a voyage from Cardiff to Malta when the explosion occurred.

PETROLEUM AS FUEL.—Some experiments have recently been made in the Navy yard at Brooklyn with a view to utilising petroleum as fuel, instead of coal. At a very trifling cost an enormous degree of heat was easily attained, estimated at 5000°, by which iron was melted in ten minutes, instead of taking, in ordinary circumstances, two hours, and glass in two hours, instead of sixteen. The petroleum was prepared for use by mixing the crude oil with pitch. The mixture was placed in a reservoir, from which it was forced by a jet of



superheated steam into the already lighted furnace, arriving there in a state of spray, when, fed by the oxygen contained and carried in by the steam, it burnt rapidly and with great intensity. Further experiments are to be made with a view of perfecting the system of utilising petroleum as fuel. The process is a development of the method adopted at the oil wells of Petrolia of utilising the refuse produced in the refining of the crude oil, where the bituminous matter, resembling pitch, yielded in the early stages of refining is afterwards used as fuel for the engines employed at the wells.

#### PROMOTION OF PUBLIC COMPANIES.

It has frequently been declared in the columns of the *Mining Journal* that much of the present depression is due to the malpractices of the promoters of public companies, since the effect has been to create general distrust among capitalists, and thus to prevent the proper development of enterprises which in themselves possess all the elements of success. The case of The Gold Company which has recently been before Vice-Chancellor Malins, and Lords Justices James, Baggallay, and Bramwell may be taken as a sample of the transactions which have disgusted those whose co-operation is so desirable, and caused many really valuable properties to remain undeveloped. The company was incorporated in November, 1873, with a registered capital of 100,000*l.*, in 1*l.* shares, to work mines in Great Britain, but more especially to work an extinct gold mine in Wales. One of the Articles of Association provided that the directors might allot shares on such terms as they should think fit; and if at any time it should appear to the directors that the capital of the company for the time being subscribed would be sufficient for the purposes of the company, they might allot any shares which then remained unallotted to and among the then shareholders in proportion to the number of shares held by them, and such shares might be allotted as fully or partially paid-up shares, although no moneys might be received by the company in respect of such shares from any allottee thereof.

Now, the existence of such an article, coupled with the fact that no prospectus was advertised by the promoters, should alone have sufficed to satisfy capitalists that all was not bona fide; or, in other words, that the common practice of sacrificing the bona fide applicants for shares to save the promoters and directors in the event of the concern not floating had been determined upon. The public evidently saw this, for of the 100,000 shares at disposal only 2375 were taken up, and the remaining 97,625 shares were all subsequently issued as free shares.

The prospects of the holders of shares acquired by purchase can be readily estimated—their money being placed in a concern without working capital, or where 2375*l.* has to earn profits on 100,000*l.* worth of stock, it follows that if the mine return profits at the rate of 50 per cent. upon the amount expended on it those whose money was employed could only receive less than 1½ per cent. upon their investment, while, as a matter of fact, the attempt to work a mine requiring 100,000*l.* working capital with but little more than 1-20th of that amount renders failure certain; and in due course the Gold Company went into liquidation. But the whole of the transactions from the day of the incorporation of the company point to an absence of any intention on the part of the vendor or promoters to leave the incoming shareholders a loophole for escaping without loss. It appears that at a meeting of the company, held only four days after the incorporation, Messrs. Joseph Aspinall, James Leslie Walker, John E. C. Matthews, Richard Attenborough, Wilson, Milford, and Vickers were elected directors for a period of four years. On Dec. 31, 1873, a contract was executed under which the directors allotted 18,775 free shares to the persons who were then holders of shares, in consideration of advances made and expenditure incurred by them. At that time only 2375 shares had been taken up. On the same day 2500 other free shares were allotted to Mr. W. Aspinall, the vendor to and chief promoter of the company, as remuneration for his trouble in obtaining the incorporation of the company. At the same time 1350 more free shares were allotted to promoters, directors, and others interested in the company, or to their friends, and subsequently all the unallotted shares were allotted without payment to the then existing shareholders. Mr. Carter, the petitioner, purchased in the market, at a premium of 9*l.* per share, 100 of the shares which had been allotted to Vickers as free shares. The working of the extinct gold mine having proved a failure the company passed a resolution for a voluntary winding up of the concern, and appointed their secretary to be the liquidator. The petitioner alleged that when the free shares were issued by the directors they had not sufficient capital to carry on the undertaking of the company, and that the transaction was not bona fide, but solely with a view to keeping the company afloat, and enabling the directors and their friends to obtain a profit by trafficking in the shares. Vice-Chancellor Malins held that the shares had been allotted when there was not sufficient capital to carry on the company's undertaking, and when the concern had no value whatever. The petitioner had bought the shares from persons who had paid nothing for them, and knew that they were worthless. The resolution for a voluntary winding up was merely for the purpose of preventing the affairs of the company being properly investigated, and under the circumstances there ought to be a compulsory winding-up.

It is not at all surprising that those who had been connected with such nefarious practices were unwilling that their conduct should be openly investigated in a court of law, as the inconvenience of being required to meet a charge of conspiracy to defraud is, no doubt, great. As an alternative they decided upon appealing against the Vice-Chancellor's decision, and in the result they have succeeded in at least deferring criminal proceedings against them, although the Lords Justices did not hesitate to express their opinions so strongly upon the character of the transactions in question that a large number of gentlemen who are in precisely the same position as the promoters of the gold company must feel exceedingly uncomfortable. The escape has been upon a merely legal technicality. Lord Justice James said the first point raised on this appeal was a very important general question, far beyond the mere case before them, as to whether the petitioner, being a contributory shareholder, had a right to present a petition for a compulsory order after there had been a voluntary winding-up resolved on by the company. The clause of the Act said that a voluntary winding-up should be no bar to such an application by a creditor, but he was inclined to think, from the general construction of the Act, that the voluntary winding-up was an insuperable bar to a subsequent compulsory winding-up on the application of a shareholder. The Act appeared to contain a great number of provisions calculated to prevent any mischief which might otherwise arise from anything which had been done to a shareholder by the voluntary winding-up. The detailed facts, however, were few, and undisputed. No doubt the Deed of Settlement contained a most extraordinary provision, which the Vice-Chancellor had denounced in strong terms, and he (the Lord Justice) was not prepared to differ from him in that respect—a clause enabling the shareholders to issue a large number of shares; but the petitioner became a shareholder in a company of which that was one of its provisions. The petitioner's case, his lordship continued, was that by this mode of dealing with the shares, and by subsequent devices and practices in the stock market, he was deluded into giving 100*l.* for that which was not worth 100 farthings. He could not help thinking that the Vice-Chancellor did not use too strong language in describing what was done, because it was evidently intended by some persons interested in the company to make a false representation in the market, and thus induce purchasers to think they were getting something of value when it was valueless. They were giving money for that which was a sham, and, therefore, in the case of the petitioner there was an individual wrong done to him, but not by the company, nor by any persons in a fiduciary character to the company. It was a wrong done by the individual who deluded him into the purchase, and by the parties who assisted in perpetrating the fraud, and, therefore, he might be entitled to such relief as the law allowed him; but that had nothing to do with winding up compulsorily or otherwise. Although he could not say there was any actual fraud proved, yet he thought the transactions were such as were likely to lead to

fraud, and he agreed with the Vice-Chancellor in expressing his strong disapprobation of such machinery having been resorted to which might have been the means of fraud upon those unwary persons in the stock market who might have been induced to buy shares.—Lord Justice Baggallay concurred.

Lord Justice Bramwell was of the same opinion. He expressed an opinion that the 11th clause in the Articles of Association was a most improper one, and that it was almost impossible to believe it had not been put in for a fraudulent purpose. The mischief in this case was not done by the company, but by those who went into the market with these pretended shares for the purpose of deluding persons into buying them. He was by no means clear that a remedy could not be had against them, and that if they were indicted for conspiracy they would not be convicted and punished for it. He said this with the object of warning others from repeating a practice which was so objectionable.

The remedy for the state of affairs which has obtained in this case is not easy to suggest, for where men are disposed to be dishonest they can usually find a method of evading the Acts of Parliament which are inconvenient to them; all that can, therefore, be done is to turn public opinion against such malpractices, and to let it be as widely known as possible that such frauds do not assist in securing the assistance of capitalists, and that it is necessary for every capitalist to make himself complete master of the Articles of Association of a company before he invests in it. In most cases in which such clauses as those complained of are to be found the concerns are what are technically called market concerns; the shares are quoted at a premium before the whole of the stock is issued, or at least before such stock is in the hands of the general public; and the dealings of those connected with the selling and promoting are not bona fide. There need never be hurry in the purchasing into new concerns, and if capitalists would but take the trouble to investigate before embarking they would save their own pockets, discomfort such men as the Gold Company promoters, and confer permanent benefit upon industrial enterprise.

#### THE POSITION AND PROSPECTS OF COMMERCE.

The dispassionate discussion of the real effect of the fall in prices which has taken place within the last few years is extremely difficult at a time when that fall is necessitating a reduction of workmen's wages, which leads to most disagreeable disputes between the representatives of capital and labour, more especially as the only conclusion that can be logically arrived at when a general fall in prices and a general fall in workmen's wages are simultaneous is no one permanently suffers from the fall, which, on the other hand, is of enormous benefit to a country like England, which is to a considerable extent dependent upon foreign commerce for her prosperity. The Fall in Prices formed the subject of an interesting paper read before the Statistical Society, on Tuesday evening, by Mr. R. Giffen, of the Statistical Department of the Board of Trade, and briefly stated the conclusion at which Mr. Giffen appears to have arrived is that the present low prices are likely, partially at least, to be of a permanent character; and for the good of every branch of British industry it may be hoped that he is correct. To show the extent of the fall, Mr. Giffen compared the prices of leading wholesale commodities on Jan. 1, 1873, the period of maximum inflation, with prices of the same article on Jan. 1 of the present year. Thus Scotch pig iron fell per ton from 127*l.* to 43*l.*, Straits tin from 142*l.* to 61*l.*, coals from 3*l.* to 19*l.*, wheat per quarter from 55*l.* 11*d.* to 39*l.* 7*d.*, cotton per pound from 10*d.* to 5½*d.*, wool per pack from 23*l.* to 13*l.*, prime beef (small) per stone from 5*l.* 3*d.* to 4*l.* 9*d.*, and so on with many other articles.

The general acceptance of the doctrine that the effort of all should be to confer the greatest good upon the greatest number removes all justification for complaining of low prices, provided only that they be general, and at the present time there is really no ground for stating that the price of any commodity is excessive, although many have probably not reached their lowest figure, because they have not fallen in the same proportion as others. The inconsistency of the grumblers is that whilst they rejoice in obtaining their coals at 37 per cent. less, and their bread, beef, tea, sugar, and clothing at a vastly lower price than they paid five years ago, they object to submit to a diminution of the dividends they receive from their investments in collieries, trading companies, or other enterprises which are compelled to accept lower prices for what they sell. Like all who turn their attention to the manufacture of hypotheses, Mr. Giffen enters upon many speculations which will scarcely bear the test of searching investigation, but this does not alter the fact that they are worthy of consideration. Sometimes the logical conclusions scarcely suit the views of those who affirm the premises (with two *s*) from which they are drawn, and this is especially the case with those who have been loudest with their sorrowings during the recent depression. The fall of prices is of advantage to everyone except holders of stocks, and miners are not in the habit of holding stocks (when, as in the case of Wheel Owles and other mines, tin has been stocked the adventurers remove themselves from the category of miners to that of commercial speculators, and, therefore, must not attribute their losses to mining), for their tin, copper, lead, coal, or other mineral is readily sold as fast as raised, and practically the price paid to the workmen is regulated by the prices obtained for the mineral. The amount of dues paid is also in proportion to the mineral raised, and the only real stock held by the mine adventurer is the machinery and plant.

It may be accepted as true that most of the mines will return the capitalist a fair interest (usually an enormous interest) upon the market value of the machinery and plant, and upon the working capital absolutely necessary; but where the capitalist elects to pay a premium upon the purchase, and to engage the services of a large board of directors and of expensive officers, this is merely an evidence of such capitalists' want of ordinary business tact, and a loss of their capital and interest together is but a proper return for their stupidity or cupidity, for too often they make their purchases upon the chances of the shares rising in value, so as to enable them to find greater dillards than themselves, rather than upon any business estimate of the intrinsic value of the property. No mine is worth more than five years purchase, taking the yearly dividends as the annual value; and in the case of progressive mines the purchase price should never exceed the amount of the value of the machinery added to twice the amount of wages (exclusive of directors and superior superintendence) actually paid within the preceding three years. This is an ordinary business calculation, which is seldom attended to by purchasers, who, consequently, throw away their money, or, rather, hand it over to promoters and professional managers, who do equal injury to capitalists and to the mining industry of the country.

As to the cause of the decline in prices, Mr. Giffen attributes it to an appreciation in the value of gold, although most persons will probably consider the facts are altogether against him. There is a greater demand for gold since Germany has adopted a gold coinage and the United States have resumed specie payments, and yet the annual production has steadily diminished; hence a tendency for gold to become more valuable. That these several statements taken separately are true may be admitted, yet it does not follow that the increased demand and diminished production of gold has brought about the present low prices, and to a great extent this is acknowledged by Mr. Giffen in assuming the existence of a concealed appreciation in gold because a visible appreciation cannot be found. As a matter of fact workmen's wages actually have fallen with the fall in prices, or at least have followed closely upon the fall, so for Mr. Giffen to point out that workmen should submit to a reduction of wages because prices have fallen is only recommending a common practice. Workmen know perhaps better than Mr. Giffen that wages and the market price of commodities must fall together, and the chief cause of strikes and trade disputes is not attributable to the workmen ignoring this principle but to a difficulty usually encountered in adjusting the reduction of wages to the fall in price. It is as undesirable in the interests of industry generally that the capitalist should cease to receive profits on his investments as that the workmen should receive too little for his labour; in the latter case the workman is unable to make the proper amount of pur-

chases of commodities, and thus fails to assist the circulation of money; in the former the circulation is stopped by the capital being kept idle—in each case both capitalists and workmen suffer.

But to vary wages exactly in proportion to the ability of the employer to pay them is impracticable, as Mr. Giffen will himself comprehend if he considers that to carry out the principle justly the result of a depression of trade would be a reduction in the wages of Government servants generally—those at the Board of Trade being those which should be commenced with, inasmuch as that department is most closely connected with trade—because of the diminished ability of traders to pay taxes. And this really leads us in the direction in which we must look for improvement. Most of our Government offices have at least double the number of servants required to do the work which has to be done, and similarly most of our industrial establishments have fixed charges in the shape of directors' remuneration, management expenses, and such like, which are consuming their vitals and ruining the country. This, however, is a matter which will correct itself, and needs no special legislation. The introduction of the limited liability led to the multiplication of superior officials to an injurious extent, and the principle extended itself to Government offices. The present depression ought to have the effect of removing the drones, and then a revival of prosperity will immediately follow. Both capitalists and workmen must be cared for if we would have an active business, and neither party can keep too constantly before them the remark that has been so truly made that, although "labour is the engine, capital is the steam."

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Jan. 23.—I have to report a continued stagnation in the demand for the staple products of this district outside fuel for domestic purposes. Buyers still refuse to come forward with any spirit, and the result is there is great inactivity throughout the district. The output of pig-iron is being restricted more and more. The latest addition to the furnaces recently put out of blast is that of Messrs. M. and W. Grazebrook, of Dudley, who have blown out consequent upon diminished sales. Lilleshall all-mine hot-blast iron is quoted 3*l.* 5*s.* short weight. One or two other makers demand 3*l.* 10*s.* Skilful buying, however, in exceptional instances, secures all-mine pigs at a level 3*l.* The most noticeable feature in the finished iron trade is the small demand which the sheet makers are meeting with. Foreign and home orders have alike considerably fallen off of late. The chief consuming market—the galvanisers—have just now comparatively little work to do, and this fact accounts in much part for the slackness of the sheet makers. The prices of sheets (singles) are 7*l.* 10*s.* to 8*l.* 10*s.*, but with a few makers good orders can be placed for 7*l.* The plate makers are badly in want of orders, and they speak of never before having had such a dull time. The tin-plate market has during the past month or two experienced a change very much for the better. Prices have advanced from 1*s.* 6*d.* to 2*s.* per box, and upon orders secured at these advanced rates makers are now busy. Furnace and forge coal is very slow of sale, and the prices realised are next to profitless. The house coal trade is having a better time of it than for a year or two back.

The Stipendiary for North Staffordshire decided on Wednesday that a colliery agent was not responsible for a neglect of duty besides the certified manager. Mr. R. Forrester was summoned for a breach of the Mines Regulation Act at Weston Coyney Colliery, Longton, of which he was the agent, the manager having been fined 20*l.* for the same offence. The summons was taken out at the instance of the Home Office. A case was granted to the prosecution for a Superior Court.

Negotiations are going on between the colliers, who number some 500, of the New British Iron Company, who left work under notice three weeks before Christmas, and the mining engineer of the concern with a view to their being re-employed. There is a disposition on the part of the masters to start the pits again if the men will submit to a lengthening of the working hours, but at present no definite conclusion has been come to.

On Tuesday the annual meeting of the Iron Trade Wages Board will be held in Birmingham. Mr. Chamberlain, M.P., will preside, and, in addition to the ordinary business, the new wages scale, consequent upon the fresh Weights and Measures Act, will be considered. Some interesting figures showing the business which has been done with the United States by this district during the several quarters of 1878, as compared with the corresponding periods of 1877, have been compiled by Mr. E. Schuyler, American Consul at Birmingham. For Birmingham and district, including Coventry, Oldbury, Dudley, &c., the total for 1878 stands at 339,086*l.*, which is an increase over 1877 of 20,555*l.* For Wolverhampton the total is 4953*l.*, a decline of 6905*l.* Kidderminster figures as 26,625*l.*, which is a decrease of 1315*l.* Redditch figures as 82,151*l.*, a falling off of 31,205*l.* The grand total amounts to 452,818*l.*, showing a total decrease of exports to the States from the Midlands during 1878 as compared with 1877 of 18,860*l.*

The North Staffordshire coalmasters are quite active in filling orders for house coal, and they are securing fairly good prices. Fuel for use by the earthenware manufacturers is in next best demand, but the orders from this source are by no means up to the average of a good time of trade. Blast-furnace and mill and forge coal is in very poor enquiry. Pig iron makers are no worse off than they were, but this is not saying much. Buyers show little mercy in the matter of prices: 3*l.* to 3*l.* 5*s.* is the quotation for best sort, while common sorts are about 2*l.* as a minimum. Finished iron is in slightly better sale. Crown bars are openly 6*l.* 15*s.*, but contracts are not difficult to place at 6*l.*

#### REPORT FROM CORNWALL.

Jan. 23.—Matters in mining circles remain pretty much where they were, with the exception that the general tone is again decidedly more hopeful. There seems to be no adequate cause in the general condition of the tin market for the last reduction made by the smelters; and, as the feeling of uneasiness caused by the stoppage of the Cornish Bank is wearing away, and the anticipations of forced sales of tin on a large scale remain unrealised, we may expect to see prices very shortly again advanced. But the smelters are cautious men—collectively, at any rate, and just now, perhaps, there is less independent action among them than, in spite of their alliance, we have been accustomed to see of late years. Whenever the rise takes place—and to all appearance it must be soon—we may be sure it will indicate a very distinct and well marked recovery.

West Roskear is the only mine in which the stoppage of the Cornish bank has really caused difficulty. There was no money forthcoming at the last pay-day, nor subsequently, though promised, and operations have since been temporarily suspended. But there appears no reason to believe but the cessation of operations is temporary only.

The weather is exercising an untoward influence upon mining operations. The severe frost and snow of a short time since put an end to all surface building operations, and seriously curtailed the dressing at many mines. That was succeeded by a spell of wet, and the effects of this are now being fully felt. Heavy rains never make themselves immediately apparent, but sooner or later they are sure to tell upon the pumping. There are several cases where, as at West Chiverton, the water has gained on the engines, though they are working on the average quite double the usual speed. Now we appear to be in danger of another term of cold and frost; but the weather is so uncertain that it is difficult to form any idea one day what the next will be like.

There are some indications to which it may not, perhaps, be expedient to refer more at length just now, as the dues question will again very shortly come prominently to the front. The sooner some lords are taught that it is neither in their right, nor to their advantage, to exact the pound of flesh the better. What is wanted is that the whole system should be put upon an equitable self-adjusting basis, and that we should not need these continued appeals to lords in hard times when caprice may rule instead of (as in the majority of cases, we are glad to say) justice and liberality.



Does on profits only, and full compensation for surface damage and occupation, should be the watchwords of this branch of mining reform.

The use of boring machinery continues to make steady progress. Messrs. Ullathorne's drill has done over 10 fms. in four weeks at New Cook's Kitchen through hard granite. Electric blasting is being experimented on at this mine also; and it is to be hoped that ere long it will be practically introduced into the county. It is an excellent system in many ways, but hitherto has never had a fair chance here.

Mines generally appear not only to be looking well, but unusually so. The new lode discovered at Phoenix is one of the most important discoveries we have had of late years in that district; it is another proof among many that we are as yet very far from knowing what the full extent of the mineral resources of the county are. With a large surface area still unexplored, or only partially so, and with lodes continually increasing in richness at the deepest points touched, Cornwall shows no signs of exhaustion.

The South-Western Railway have opened a new branch line from Okehampton to Holsworthy this week. It will be of value wholly in an agricultural and general sense, unless at some future time it should be extended to North Cornwall, and open up the Delabole district. But that is probably, if at all to be realised, very far in the future.

The Miners' Association of Cornwall and Devon holds classes now at Redruth, Camborne, Tuckingmill, St. Agnes, Pendeen, St. Just, Helston, Hayle, St. Ives, Breage, Penzance, Chasewater, Truro. There is a large and able staff of teachers under the supervision and direction of the lecturer, Mr. B. Kitto, F.G.S., and more good work is to be expected. The list of prizes for 1879, in addition to the ordinary departmental and council prizes on each subject, includes several offered by the Editor of the *Mining Journal*.

The Davy centenary is to be celebrated at Penzance on Feb. 12, 13, and 14, and every effort is being made to produce a success. The chief feature will be a grand exhibition of scientific apparatus, the uses of which will be explained, while the chief discoveries of Sir Humphry will be experimentally illustrated. In addition to private help, many of our leading scientific societies will contribute, including the Science and Art Department, South Kensington, the Royal Society, and the Royal Institution of Great Britain, and the local societies of the county. The Rev. Triner Bennett and Mr. A. K. Barnett, F.G.S., are the secretaries. We shall recur to the subject when the details are advanced.

At the monthly meeting of the Mining Institute, at Camborne, on Tuesday next, Mr. W. Schonheyder will read a paper on "Surface Condensers," a topic of more practical importance than is always recognised.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

Jan. 23.—Since the dispute between the Midland Railway Company and their employees terminated the mineral traffic from Derbyshire to the South has again got into its old groove, but whilst it lasted it created no small inconvenience, and caused coal merchants in particular to go into other districts. This state of things was felt all the more in consequence of the severity of the weather having led to an increased demand for house coal, as well as to an increase in the price. The collieries, however, are now working very well, and the business may be said to be favourable for soft coal. Prices, however, have been rather unsettled, for there was a jump in London in one day of no less than 2s. per ton, but it did not last for a week. Still the rates are higher than they were during any part of last year, and colliery owners say that nearly all the difference goes into the pockets of the merchants, who fix the prices independent of those from whom they obtain supplies. Steam coal, however, still meets with a very dull sale, and the same may be said with respect to engine fuel, slack, and smudge. The consumption of coke is not by any means so large as it has been, more particularly in the Sheffield district. As yet none of the miners in Derbyshire have, we are pleased to say, come out on strike, and whether they will or not will be decided upon on Tuesday next, when there is to be a meeting between a deputation representing the men and another the Employers' Association. Most of the collieries, however, under any circumstances will go on working as usual, whilst the men who are under notice believe that they will be able, from the promises of support received, to stand out for a considerable time. At the ironworks in the Chesterfield district, as well as those along the Erewash Valley, trade has been quiet. The business doing in pig is at very low rates, and sales are not easily effected cheap as raw iron is. Mill material is a little in but moderate request, and many ironworkers are still standing. At one place the men had notice of a reduction of 10 per cent., and all without hesitation accepted it, excepting about 20, whose places were at once filled by men who had been idle for some time, thus showing that striking at present is out of the question, for the men are glad to obtain work to maintain their families, so that principle has to be thrown overboard in favour of provision. In the lead districts work moves along much in the usual way, the miners being more easily satisfied than those engaged in collieries, and who have long been used to high wages and short hours.

In Sheffield the distress has been much greater than was expected, and the visitors find a great deal of quiet suffering, and uncomplaining poor living on their furniture and clothing till they had none left. There is, however, an active committee of both ladies and gentlemen, and blankets, clothing, and coal, as well as provisions, are supplied to those in want. The Mayor's Fund now amounts to about 10,000*l.*, and there is every reason to think that it will all be required, if not more, for trades does not seem to mend. There are two or three branches that are doing tolerably well, but the majority are just the reverse. A very fair business continues to be done in Bessemer rails, as well as in Bessemer for other purposes, for in some instances it is being used instead of crucible steel, being much cheaper. In cutlery goods there has not been much change lately, one or two firms doing tolerably well, in the best qualities of table, pocket, and penknives, but there is not much doing in inferior qualities, some of the German manufacturers now meeting us in our own markets in secondary descriptions of pocket knives in particular, which are generally well finished and attractive, as well as low in price. Attention is now being devoted by several well-known firms to the production of steel plates for defensive armour for ships, seeing that iron plates are not likely to be so extensively used by the Admiralty as they have been, and one of the partners of the Phoenix Bessemer Works has just taken out a patent for piled plates which can be made of Bessemer or other steel.

The ship and boiler-plate mills have been running tolerably well, considering the state of trade generally, while the foundries are rather worse off than they have been, many of the moulders being on short time. In South Yorkshire the coal trade has kept up very well, and a heavier tonnage than usual has of late been sent over the Great Northern to the Metropolis. On the other hand, steam coal does not sell at all well, so that a great deal of it has to be stacked, and, of course, is much deteriorated by the present weather, for it has to lie on the ground for a considerable time. The wages question has become quiet of late, and at Barnsley, on Monday, at a meeting of the council of the Miners' Association, it appears not to have been much talked about. The men, however, are evidently firm in their intended resistance to it, and they have been promised support from the miners in West Yorkshire equal to a levy of 2s. a week per man.

At the Denaby Main Colliery, near Doncaster, the men have resumed work after a struggle which has lasted some time. They state that the dispute has come to an end by their submitting to a reduction of 5 per cent. in wages, and losing their check weighman whom the owners determined should not be allowed to act for them.

On Monday evening the directors of the Hoyland Silkestone Colliery called their creditors together for the purpose of obtaining an extension of time to meet the liabilities, some of the creditors having pressed them very hard. The meeting was adjourned for a week. The company was established about four years ago, with a capital of 50,000*l.*, but, like most other collieries, low prices have

told against it. The chairman is Mr. Lodge, who recently wrote a letter to the local papers deprecating as uncalled for any reduction of miners' wages.

On Wednesday the Dodworth and Silkestone Coal Company was summoned before the Barnsley bench of magistrates for the non-payment of rates. The usual order was made.

Mr. Howe, engineer, who has long been connected with the Clay Cross Collieries, died a few days since. He was the inventor of the link motion, and was an old friend of the late George Stephenson.

A Bill for the supplying of certain colliery districts in South Yorkshire with a supply of good water will be introduced during the ensuing session of Parliament. It is similar to that obtained by the Wakefield Corporation in 1876, slightly modified by the engineers. There are some signs of an opposition on the part of a small company that supplies a township with water from a well. As the purity of such water is always questionable, and that alluded to strongly impregnated with iron, the opposition is not likely to interfere with the progress of the Bill.

#### REPORT FROM THE FOREST OF DEAN.

Jan. 23.—The weather undoubtedly has much assisted the maintenance of the improved condition of the local coal trade, as, with some occasional tendencies to thaw, its severity has been sustained in a marked manner. The majority of collieries hereabouts are employed, but even now there are numerous instances of forced idleness. Most of the large collieries are pretty fully employed; how, then, can we account for numerous instances of depression? In this way: the steel works and Parkend furnaces and tin works are idle, or closed, as well as several iron mines, mostly in West Dean, and therefore (excepting those who have migrated or emigrated) the men formerly employed at those works are cast upon colliers' work, so that a larger percentage of the Forest population, in comparison to the total number, is dependent upon pit work, which partly accounts for a deficiency of such work. Partly, too, the deficiency may be accounted for by the fact that numbers in the dear coal period were employed at small collieries or works, which are now shut up, because unless coal will sell at tolerably high prices they will not pay to work. We see, then, that although the principal pits are active under present quotations, the number of pits at work, as compared with better times, is considerably reduced. These circumstances go far to explain an apparent anomaly; as it has puzzled some at a distance in reading about a brisk coal trade and distress side by side. The foregoing, or rather the forested, circumstances are the explanation. There is, unhappily, more or less distress nearly over the whole Forest. Private benevolence does something to alleviate the sufferers, and at Coleford there is a committee engaged in the good work of assisting the distressed. The tin-plate trade is still without much life at either of the Forest works—Lydney or Lydbrook—and Mr. Chivers is holding back from tin manufacture on account of the weather, it being considered hazardous to start the new machinery during the hard frost lest a breakage should mar the first full operations.

The sewage difficulty has again come to the front. A Government Commissioner was in the Forest last week, and held an enquiry at Cinderford Town Hall respecting the advisability of borrowing more money for extending the works at the outfall, and some additions to the waterworks. Mr. J. T. Harrison was the gentleman who held the enquiry, and is undoubtedly a man of ability. There was a large attendance of ratepayers, and great interest was taken in the proceedings—mainly because many are strongly opposed to what they consider a waste of money. Many consider that the works constructed for the removal and cure of nuisances to be the greatest nuisance that was ever in the district. The sanitary works at present are certainly not worth the money expended on them, nor has everything been straight and aboveboard in the proceedings of those engaged in carrying them out.

The chemical analysis which we forwarded to you for insertion in the *Mining Journal* seemed to indicate that the charge of polluting the Sewdley stream and killing the fish was an unjust one; but it came out during the examination of the local inspector that poison had been used rather liberally at the tanks. Copperas, alum, and lime had been in use. A good deal of opposition was shown against wasting any more money. Mr. P. Constance, millowner on the stream, has commenced an action against the sanitary authority, and altogether the surroundings are so discouraging that the local authority is hesitating as to whether they shall proceed in their course or throw the whole responsibility on the Local Government Board in London. In our opinion the latter course would be the wiser one to adopt; for until the head department can suggest a certain remedy for the sewage poison, why should it compel towns and districts to waste thousands of pounds without curing the evils, and thereby bring grievous and oppressive burdens upon the community? Time precludes our writing more at present, but for a future issue we may return to the subject.

#### TRADE OF THE TYNE AND WEAR.

Jan. 23.—The position of the Coal and Coke Trades are, on the whole, a little improved; the demand for house coal is fully sustained, and for other coals and for coke for shipment foreign there has been some increased demand. The prospects of the coke trade from the Tyne and Wear to Spain and the Mediterranean ports are a little improved. With respect to the general trade on those rivers, it is considered that it is stronger, and it is expected that it will continue to improve. Under present circumstances, however, with prices extremely low all round manufacturers are not disposed to enter upon business for forward delivery. The present is always a dull season for the steam coal trade here, as most of the northern ports of Europe are closed with ice. From this cause many of the steam coal works have only been moderately employed. At Cambois and other large works near Blyth the pits have only been partially at work, but the Delavels and Bebside have been nearly fully employed. At Shire Moor, where very little has been done for some time, it has been decided to close the works entirely for a few months. The Pegswood Colliery, closed some time ago, is expected to be reopened, the owners having made a contract to supply the North-Eastern Railway Company with steam coal. Many of the works in Durham are fully employed six days per week, but others are only partially going, and works are still being closed. At one of the large works at Rainton, belonging to Earl Durham, 400 men and boys have received notices to terminate their engagements. The process of reducing the wages of all classes of men employed in and about pits is still continued, and when the men refuse to comply with the proposals of the masters the works are, as a rule, closed.

The stoppage of the Ferry Hill and Rosedale Iron Company has caused some sensation here. This great company was founded by the late Mr. Morrison, of Newcastle, a most enterprising and ingenious man. He commenced his career as an inventor in connection with the washing of small coals for the manufacture of coke. He established works for washing the coal and manufacturing coke in the Wear and also in Derbyshire, and he realised a good profit from this source. In 1859 he founded the Ferry Hill Ironworks. There were ten blast furnaces, all of them large ones; two are 80 feet in height, four 81 feet, and four 105 feet—the last are supposed to be the largest furnaces in the world. Lately only three of those furnaces have been in blast; when at full work 4000 tons of pig-iron per week was made. This company also owned the celebrated iron ore mines at Rosedale, where very fine magnetic ore is found, part of the deposit being 120 feet in thickness, yielding iron from 48 to 50 per cent. The firm also own extensive collieries both in Durham and in the Midland district. It is expected the works will be carried on by the trustees, as the position of the company is good, and ultimately all demands will be met. At a meeting held on Tuesday at Middlesborough a report was presented by Messrs. Monkhouse and Co., accountants, showing if all the undertakings of the company were realised just now at what would be a necessary depreciation there would be at least 70,000*l.* surplus after all liabilities were cleared off.

There was a good attendance on 'Change at Middlesborough on

Tuesday, but business was very limited, on account of a continued slackness of demand, and the effect of the failure of the Rosedale and Ferryhill Iron Company (Limited). This formed the chief topic of conversation on 'Change. The market did not show any marked change from last week; the tendency, perhaps, is downwards. Business, where it takes place, is at about 34s. to 34s. 3d. net, though some makers are firm at 34s. 6d.; forge iron, 33s. 9d.; No. 1, 33s. Buyers, however, hold back till trade takes a more definite form, and makers do not press sales. The deliveries of pig-iron have been on a restricted scale, as well for Scotland as for the Continent. The question of making steel from Cleveland iron has again been brought forward by some experiments at Middlesborough, made by the Standard Iron and Steel Company, with a combination of Thomas's patent process. The experiments, so far as they have gone, give a good prospect of success. There are hopes of the shipbuilding dispute being amicably settled by the employers receding from a portion of their demands. A meeting was held on the subject on Tuesday. The manufactured iron trade has remained in a quiet state. There have been a few enquiries for plates, but, taken altogether, there can be no improvement recorded whilst prices are low. Ship-plates are 5*l.* 10s. to 5*l.* 12s. 6d. Common bars can be obtained from 5*l.* 2s. 6d. to 5*l.* 5s.; angle-iron, 5*l.* 5s., less commission. If the wages question in the shipbuilding trade should be quietly settled it is believed that additional orders may be expected for iron vessels.

#### REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Jan. 23.—The Abercarn explosion enquiry has been going on rather more rapidly during the last few days. Yesterday the Court was occupied with the examination of Mr. Pond, the certificated manager, and no evidence of neglect was disclosed. He stated that the company spared no expense in order to make the colliery safe, and he always carried out any recommendation made. Mr. Pond thought the explosion was not due to the carelessness of any one man. To-day it was expected that the Inspector of Mines and other scientific evidence would be called. There appears to be no doubt that the explosion originated in No. 21 district. As to the Dinas explosion, the exploring party are working hard, and it is to be hoped the bodies will be reached in the course of a few days. The men's representatives have issued a circular asking subscriptions in order to enable them to employ legal assistance at the enquiry into the cause of the Dinas accident. Great distress prevails among the relatives of the deceased men.

It would be interesting to note the number of companies which have had to figure before the Chancery Division during the last twelve months or so, in consequence of the dulness of trade. Orders for the compulsory winding-up of the Blaenavon Company, and of T. W. Booker and Co. (Limited), have been made during the last few days. In the case of the Dulais-Merthyr Colliery and Brick Company a petition has been ordered to stand over for a future day, while in that of the Vernpistell Colliery and Fire Brick Company (Limited) an order for the voluntary winding-up of the company, to be continued under supervision, has been made. In the case of the Rhondda Merthyr Colliery Company, a petition has been presented for a reduction of capital. From the statement made by the counsel it appeared that extra capital was raised in 5*l.* shares, to the extent of 20,000*l.*, which Mr. Ebenezer Lewis took up, and the company proposed to pay him back. They were going to pay back capital—and, in fact, were going (so said counsel) to borrow the money for that purpose, and be under the same liability to the new creditors as to Mr. Lewis. There was no variation in the amount of capital, in fact. The case was adjourned.

At Tredegar Police Court a fitter at Ebbw Vale, under the company, and who is one of those now on strike against a reduction of wages, was charged with intimidating another fitter who had resumed work. He was fined 5*l.*, or a month in default, but notice of appeal was given.

The manager of Fowler's Marine Rhondda Colliery has been fined 10*l.*, at Pontypridd, for permitting the use of powder in the mine within three months after gas had been found there.

Notice of appeal was also given in the case of Mr. Wm. Rosser, manager of Fowler's Colliery, Pontypridd, and Edward Williams, fireman, who were fined respectively 10*l.* and 2*l.* and costs for using blasting powder otherwise than in cartridges in the colliery, there being inflammable gas in the workings.

The shareholders of the Chepstow Bridge Ironworks have met. In consequence of the suspension of the West of England Bank, it was necessary to make other arrangements or stop the works. The meeting was a private one; but it is understood that the shareholders decided not to adopt the latter alternative, but to issue preference shares to the amount of 8000*l.*; and it is believed there will be no difficulty in getting the shares taken up. From 120 to 150 men are employed at the works.

Notwithstanding the depression in trade, it is satisfactory to state that a dividend at the rate of 7½ per cent., the same as paid in last July, is recommended by the directors of the Swansea Bank (Limited). The paid-up capital is 201,000*l.* odd, and the reserve fund 35,000*l.*

The Iron Trade it is to be regretted does not show the least improvement. Prices have not moved in the least degree, and although masters quote low there is a difficulty in obtaining orders. There is a report current that a well-known North of England firm has purchased the Blaiva blast furnaces. It is to be hoped this is true, and may lead to a restarting of the works. Clearances have been a little larger during the week. There is still little or nothing doing in railway iron, and the bar department is very inactive. The Tin-Plate Trade continues to manifest some degree of improvement, and prices continue slightly enhanced. There is a strike at the Penclawdd Works, Swansea, and summonses have been granted against 22 of the men for leaving their work without notice.

As for the Coal Trade, it goes on without much alteration, although if the demand and shipments are taken into consideration there is a fair amount of briskness. For steam coal on foreign account there is a good enquiry, but prices have not changed; this is the great difficulty in the way of employers, most of whom are losing money, it is no exaggeration to say, at the present time. House coals are in rather better request. The Aberdare and Plymouth colliers have refused to accept a reduction of 10 per cent. in wages, and as a consequence the company talk of closing their pits.

"A Practical Man" writes to the South Wales Daily News—There is not much of importance respecting the Tin-Plate Trade to communicate, notwithstanding the quarterly meeting of the tin-plate manufacturers at Gloucester, and the quarterly meeting of the iron trade at Birmingham. At the Gloucester meeting resolutions were passed, and will come into force in March, which embrace important modifications of the existing anomalies in the trade list, as affecting the relative value of crosses, doubles, and out-sized plates, and there is no fault to find with the revised list, provided the manufacturers will be faithful, and have the honesty to act to the spirit and letter of those improved rules. With respect to the extra charge upon *pro rata* proportions, in 20 by 10, 12 by 12, and 28 by 20 sizes, I fear some trouble will be experienced in conciliating the merchants and the consumers to this extra charge. This particular change may be equitable, but in practice may be found more harassing than profitable. At the Birmingham meeting there was a fair attendance of tin-plate manufacturers, and the buoyancy of their demeanour was a fair reflex of the improvement in the trade. The late rise in the price of coke-plates was fully sustained, and some heavy orders were booked at the enhanced rates, but the price of charcoal makes but sluggish strides in the wake of the just now more fortunate coke-plates. This most exceptional anomaly in the trade perplexes many minds. On the whole, the tin-plate trade is decidedly improving, though slowly, and it is regrettable to find isolated works having disputes, wrangles with their workpeople, as is now the case at Llangennech and Penclawdd Works.

THE ROSEDALE AND FERRYHILL IRON COMPANY.—A meeting of the principal creditors was held on Tuesday at Middlesborough, of the Rosedale and Ferryhill Iron Company (Limited). Mr. D. Dale, of Darlington, presided. The statement of affairs showed a large surplus upon a moderate estimate of the company's property if it



were held, and not forced upon the market, iron and coal property being unsaleable. The partners in Wood's Bank, of Newcastle, who are creditors above 40,000*l.*, announced they would present a petition for liquidation. Five leading gentlemen were appointed a committee to investigate the affairs and to report at a future meeting.

#### REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Jan. 23.—The Messrs. Watson must not think me discourteous in not noticing in the two last reports the consideration of some remarks of mine they did me the honour to notice a fortnight ago. I am pleased to notice their general agreement with my description of the metalliferous zones in the limestones of Flintshire, and would only observe that while in some respects the fact that there is a lower producing zone is a reason why a mine which hitherto has only been worked in the upper zone may again be productive if its workings are deepened, this possibility is no answer to the question I myself propounded. Why should the fact that the mine has yielded large profits in the past of itself be taken as a reason why it should be profitable in the future? May it not be simply worked out? My question had reference also chiefly to mines in Cardiganshire, where the stratigraphical conditions are different from Flintshire. Still there is very little between us. In resuscitating old mines the promoters should state the grounds on which prospects of renewed success are based.

The Slate Quarrymen's Union of North Wales are taking prompt measures with the distress arising from the sudden collapse of the slate trade. They offer assistance to the extent of 7*l.* to quarrymen desirous of emigrating to America, and double that amount to men wishing to go to Australia or New Zealand. Very likely the offer will be accepted by a good many young men, "for there is no place in the geographies, from the Menai bridge to the Pacific, where Taffy does not perch," but it seems a pity to lose our skilled workmen, especially when we consider that by-and-bye they and their children will become our competitors. The recent fall in the value of slates seriously affects merchants who held large stocks. Losses of from 1000*l.* to 3000*l.* from this source was of common occurrence. It is to be hoped that there is no truth in the report that the New Law Courts are to be roofed with foreign slates. This would indeed be a wanton insult to an essentially "British Interest" and industry, and one for which there is not the least necessity; for taking into account colour, purity, and perfection of surface the slates are not yet found that can surpass the best qualities of British slates. Such a transaction should not be undertaken in deference to an architect's whim, and it is to be hoped that the Government is not so straining its eyes after glory abroad as to be blind to the interests of common justice at home.

There has been a strike at the chemical works of Messrs. Musgrave, at Flint, against a reduction of 10 per cent. in the wages, but it seems on the point of collapsing. During its pressure a wife of one of the men attempted suicide by drowning as an escape from the anxiety and trouble of having no food for her children. The British workman bows very slowly to the inevitable. At Flint, too, there is a queer mixture of all the races of the British Islands.

In the opinion of some, colliery matters have reached their lowest depth, but of this we cannot as yet be sure. There is an increased demand for house coals, and this is all that can be said; when the frost breaks up and spring returns what is made up for the falling off in the demand from this source. Who knows, and for the present at least "sufficient unto the day is the evil thereof."

A handsome presentation has been made to Mr. Fitch, who for 20 years has been connected with the Ruabon Coal Company, on the occasion of his leaving their service. Many of the leading industrial inhabitants of Wrexham and Ruabon were present on the occasion. At this season of the year many readers of the *Mining Journal* come into connection with tax surveyors, and it may have occurred to them, as it has to me, that among the subjects for the competitive examination these gentlemen when young have to undergo might be that of politeness, and that possibly one of the qualifications essential to their office should be that of the possession of the ordinary business civility which is practised in unofficial circles.

#### PRODUCING ELECTRIC LIGHT.

Electric lamps, or regulators as they are called, usually contain complex mechanism, for the purpose of adjusting the carbon points or other material employed, to the proper distance for the production of the luminous arc, so as to allow for variations in the electric force, and for the irregular consumption of the material. By the method of construction adopted by Mr. CHARLES DUBOS, of Boulevard de Strasbourg, Paris, he avoids the use of complex mechanism or clockwork by making the adjusting action result from the balancing of two forces, gravity and attraction, depending on the electric force passing through the instrument. For this purpose he mounts one of the carbons on a soft iron rod or tube, which is guided to slide through the middle of a coil that is in the electric circuit. The weight of the slide tends to move it in the one direction, and the attraction of the coil when an electric current passes through it tends to move it in the opposite direction; or the slide may be overbalanced by an adjustable weight, the coil being so arranged as to act on it in opposition to such weight.

When the carbons are at suitable distance for the passage of the required amount of electricity to produce the luminous arc the weight and the attraction of the coil acting on the slide are adjusted in equilibrium. When the electric force varies, or when the distance of the carbon becomes altered by their consumption, the one force overbalances the other, and the one carbon is moved nearer to or further from the other until equilibrium of the forces is again attained. When it is desired to keep the luminous arc at or nearly at one focus, he mounts both carbons on slides, connecting them by a cord or chain passing over guide pulleys, so that when the one is moved as above described, the other is also moved towards or away from it. In cases where the one carbon is more rapidly consumed than the other the cord or chain from the one slide is wound over a pulley or barrel, on the axis of which is fixed a smaller pulley or barrel taking the cord or chain of the other slide.

The apparatus may be made in various forms. According to one form, which he finds convenient, it consists of a tubular framing of lyre shape, that is to say two tubes for some distance in their upper portions parallel, and then curving outwards away from one another, and again approaching in a circular curvature, and meeting below. The lower carbon slide is mounted at the bottom, the upper slide works within a coil fixed between the parallel upper parts of the tubes, and the two slides are connected by cords passing over guide pulleys and round the outward sweep of the framing within the curved tubes. The focus of the light is at or near the centre of the circular sweep, which can be backed by a reflector.

The apparatus may also have the usual form of the electric lamp, the one carbon slide being guided through a coil fixed in the lower casing, and the other slide behind it, having a projecting arm to carry the upper carbon over the lower carbon. In this case the slide of the lower carbon is overbalanced by that of the upper carbon, and on the upper slide he finds it convenient to place an adjustable weight, which may be a cup or vessel containing small shot or other easily variable load. According to another form of the apparatus he arranges both carbons in slides, guided each through the middle of a coil at a small inclination to one another, so that they converge towards the focus where the carbon points nearly meet. Both slides are in this case counterbalanced by a single weight connected to them by cords or chains passing over guide pulleys.

To prevent the fracture or irregular consumption of the carbons from causing fusion of some of the metal fittings of the apparatus he applies to each of the carbons an interceptor, consisting of a piece of non-conducting material pressed by a spring against the carbon near its point. Should the end of the carbon break off or be rapidly consumed so that the interceptor is no longer supported by it the pressure of the spring causes it to advance over the end of the carbon, and so stop the passage of electricity.

#### In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the TREMENEER MINING COMPANY.—By the direction of His Honor, the Vice-Warden, Notice is hereby given that, on the 5th day of February next, at the Registrar's Office, at Truro, in the County of Cornwall, at Eleven o'clock in the forenoon, this Court will proceed to MAKE a CALL of TWELVE SHILLINGS AND SIXPENCE PER SHARE on all the contributors of the said company settled on the List of Contributors as present members thereof. All persons interested therein are entitled to attend at the time and place aforesaid to offer objections to such call.

CHARLES WILLIAM CLINTON, Official Liquidator.  
Dated Stannaries Court Office, Truro, January 20th, 1879.

#### VALUABLE LEAD MINES IN CARDIGANSHIRE.

##### IMPORTANT TO MINING COMPANIES AND CAPITALISTS.

MESSRS. TOPPIS AND HARDING WILL SELL, BY AUCTION, at the Mart, Tokenhouse-yard, on Thursday, 20th February next, at Two o'clock punctually, the VALUABLE MINING PROPERTY known as the

#### POWELL SILVER-LEAD MINES,

Situate in the County of CARDIGAN, eleven miles from Aberystwith, affording rich lodes of fine ore, yielding a considerable and steady output, and capable of extensive development.

The mines are held under leases having an unexpired term of about 14 years at reasonable royalties.

There are powerful WATER WHEELS and ample MACHINERY for pumping, drawing, and crushing, with dressing plant and all useful buildings, including a convenient manager's house, with office, smiths' and carpenters' shops, and shed for workpeople, forming a complete going concern, all in good working order.

Full information, with permission to view, may be obtained on application to Capt. BEAR, Pontnewydd, near Aberystwith; and particulars may be had of J. W. LONGBOTTOM, Esq., Solicitor, Halifax; and of the Auctioneers, 16, St. Paul's Churchyard, E.C.

#### PRELIMINARY NOTICE OF SALE.

BOWERS' ALLERTON COLLIERIES (LIMITED).  
YORKSHIRE.

#### In the High Court of Justice—Chancery Division.

MR. JOHN HEPPER (of the Firm of HEPPER AND SONS, Auctioneers, Leeds) WILL SELL BY AUCTION, by Order of His Lordship the Master of the Rolls, SHORTLY, the

#### VALUABLE LEASEHOLD COLLIERIES,

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Index plans and particulars and conditions of sale are in course of preparation, and may be had fourteen days prior to the sale (of which further notice will be given) of Messrs. PATTERSON, WIGG, and Co., Solicitors, 11, Queen Victoria-street, London; of Messrs. DIBB and Co., Solicitors, Leeds; of Messrs. DOMVILLE and Co., Solicitors, 6, New-square, Lincoln's Inn, London; of Messrs. LAMBERT, PETCH, and SHAKESPEARE, Solicitors, 8, John-street, Bedford-row, London; of GEORGE ARMSTRONG, Esq., Solicitor, Newcastle-on-Tyne; of Messrs. SHUM, CROSSMAN, and Co., 3, King's-road, Bedford-row, London; and of Messrs. HEPPER AND SONS, Auctioneers, Leeds.

#### IN LIQUIDATION.

THE KIRK MICHAEL LEAD AND COPPER MINING COMPANY (LIMITED).

TO BE SOLD, BY PUBLIC AUCTION, without reserve, by MR. THOMAS CALLOW, at the Peveril Hotel, Douglas, on Wednesday, the 5th day of February, 1879, at the hour of Twelve o'clock noon, subject to conditions to be then produced, the

LEASE AND PLANT of the KIRK MICHAEL LEAD AND COPPER MINING COMPANY (LIMITED).

This valuable mining ground embraces an area of about 500 acres of Crown lands, held at a nominal rent, subject to a royalty of 1-12th on all minerals produced. Five separate lodes are known to exist in this area, two of which are dowke veins, unexplored, although one of them has been cut, and nice samples of ore got from it. Three adits have been driven, each over 35 fms., and lead ore out of them to the value of £2578 has been realised. There is a good supply of water for washing purposes on the ground.

The PLANT consists of a substantial WATER WHEEL, 22 feet diameter by 3 feet wide; a powerful CRUSHER; FOUR WASHING TUBS, with STANGS; WAGONS; WATER BARRELS; BLACKSMITHS' BELLWES; ANVIL; RAILS; PICKS, HAMMERS, JUMPERS, and other tools.

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For further information, apply to Mr. HOPPER, Registered Office, Kirk Michael, Isle of Man.

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B.—Situated in PRUSSIA, Province of Silesia, comprising JOSEPHSHUTTE, at ROTTLEBERG, near Stolberg-on-the-Harz, with ONE HIGH FURNACE, adapted for charcoal firing, and all the accessories for the production of 16,000 kilograms of specular iron per day; DWELLING HOUSES for officials and workmen, water power of about 18 horse power, and MINING AREA of about 910 millions square feet, containing principally SPATHIO IRON ORE. A very small portion of this area has as yet been prepared for delivery of ore, but sufficient for the production of 30,000 to 40,000 kilograms per day.

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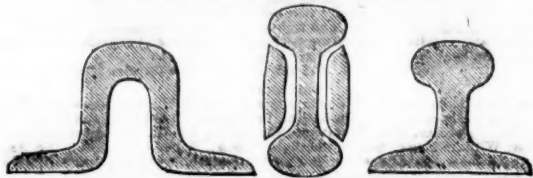
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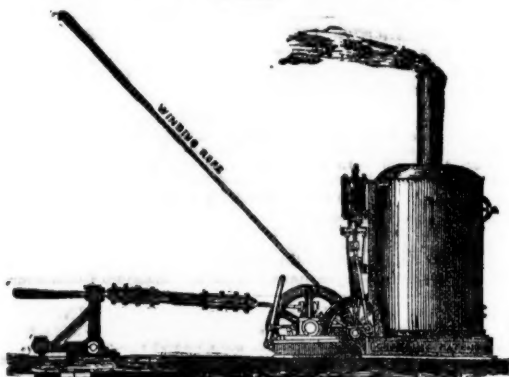
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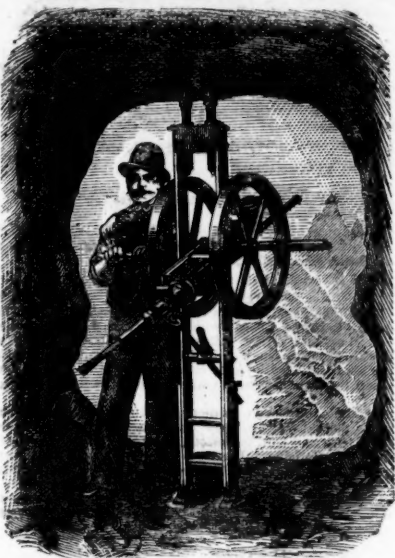
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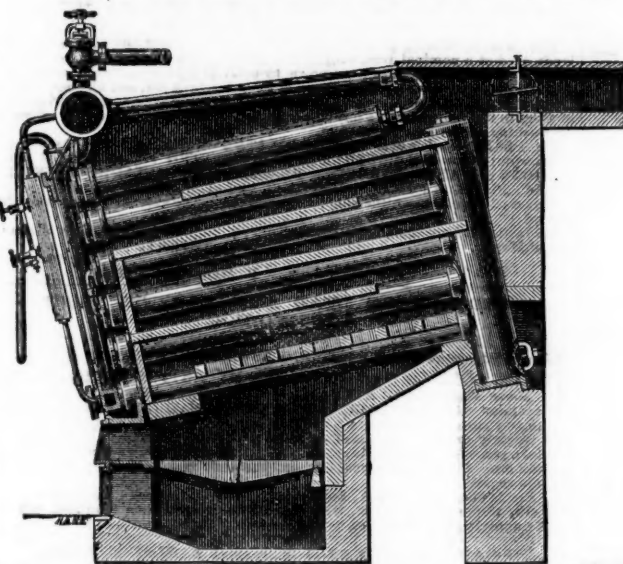
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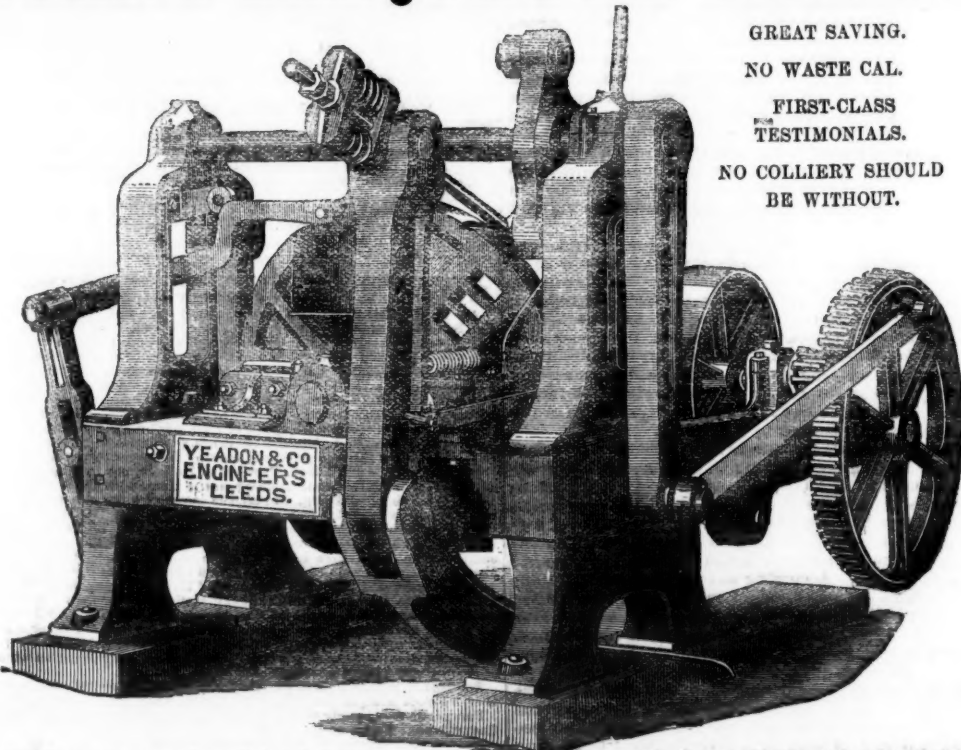
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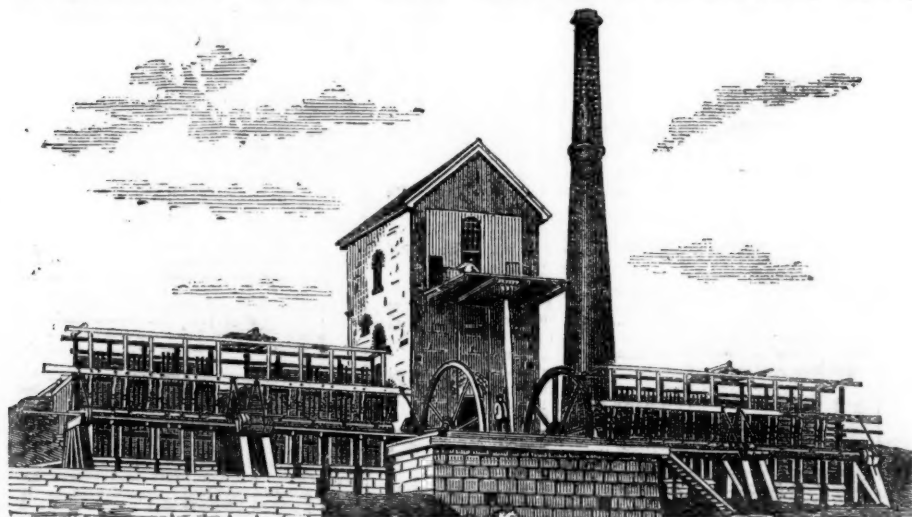
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## THE MINING SHARE LIST.

## BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Div.	Clos. pr.	Total divs.	Per sh.	Last Div.
3000	Bryn Alyn, s, Denbigh	10 00	—	—	0 7 00	1 0	Jan. 1877
10000	Caron, s, Cardigan	2 00	2 1/2	1 1/2	0 4 00	2 0	Oct. 1878
1000	Carn Brea, s, t, Illogan	55 7 6	31	28 30	308 0 0	1 0	Feb. 1878
400	Cashwell, s, t, Illogan	2 10 0	—	—	1 9 00	2 0	Aug. 1878
2450	Cook's Kitchen, s, t, Illogan	25 4 9	1 1/2	1 1/2	11 17 00	0 7	Jan. 1878
240	Devon St. Consols, s, t, Tavistock	1 00	1 1/2	1 1/2	116 15 00	0 5	July 1877
4296	Dolcoath, s, t, Camborne	10 14 10	24	23 25	113 1 00	0 5	Nov. 1877
5000	East Black Ores, s, t, Scotland	8 00	—	—	0 10 00	0 10	Feb. 1877
300	East Darwen, s, t, Cardigan	22 00	—	—	235 10 00	1 0	Aug. 1878
4600	East Pool, s, t, Illogan	0 9 9	8 1/2	8 1/2	15 13 00	1 6	Nov. 1878
40000	Glasgow Carron, s, t, 10,000 15,000 p.	1 00	1 1/2	1 1/2	0 13 10	0 6	Aug. 1878
7500	Gorehead and Merilyn Cons., s, t, Flint	2 10 0	3	2 1/2	0 8 00	0 8	Oct. 1877
5000	Great Llanelli, s, t, Illogan	4 00	17 1/2	16 17	24 10 00	0 5	Jan. 1879
515	Gr. Betsale, s, t, t, Penryn	5 18 0	—	—	0 1 00	1 6	May 1878
4000	Green Harth, s, t, Cardigan	0 00	1 1/2	1 1/2	2 2 00	0 3	Mar. 1878
5000	Grogwolin, s, t, Cardigan	2 00	1 1/2	1 1/2	0 14 10	0 10	Aug. 1878
9980	Groswold, s, t, t, s	5 00	1 1/2	1 1/2	0 13 90	1 0	Oct. 1878
80000	Holmshush, s, t, s, Callington	1 00	—	—	0 4 00	0 6	Sept. 1877
2800	Isle of Man, s, t, Isle of Man	25 00	—	—	82 8 00	0 10	Oct. 1877
50000	Leadhills, s, t, Lancashire	6 00	—	—	0 15 00	0 3	Mar. 1878
400	Leiburne, s, t, Cardigan	18 16 0	35	30 35	587 10 00	1 0	Aug. 1878
14000	Llanidloes, s, t, Montgomery	3 00	—	—	0 9 00	0 4	Nov. 1878
9000	Marke Valley, s, t, Linkinhorne	5 8 8	3 1/2	3 1/2	7 18 00	0 2	Jan. 1878
10000	Melland Copper, Hayle	2 00	4 1/2	4 1/2	0 8 00	0 3	Feb. 1879
9000	Miners Mining Co., s, t, Wrexham	5 00	10	9 1/2	87 17 80	0 2	Nov. 1878
20000	Miners Co. of Ireland, s, t, s	7 00	—	—	23 17 00	0 2	Jan. 1878
1024	North Busy, s, t, Chacewater	1 14 0	—	—	1 0 00	0 5	Oct. 1878
10289	North Hendre, s, t, Wales	2 10 0	—	—	0 12 80	0 2	Dec. 1878
300000	Panty Mwyn, s, t, Mold (8794 l.s.)	2 00	—	—	0 3 00	0 5	Aug. 1878
6000	Pedn-ar-dra, s, t, Redruth	0 8 8	—	—	0 9 00	0 2	June 1877
5000	Penhalls, s, t, Agnes	3 8 8	1 1/2	1 1/2	3 13 80	0 2	July 1878
6000	Pennant, s, t, North Wales	8 00	4 1/2	4 1/2	0 10 00	0 8	Mar. 1878
45793	Penrthulach, s, t, s, Gwynedd	2 00	4 1/2	2 1/2	0 2 80	0 8	Nov. 1878
18000	Prince Patrick, s, t, s, Holywell	1 00	1 1/2	1 1/2	0 14 00	0 1	Jan. 1878
10000	Red Rock, s, t, Cardigan	2 00	2 1/2	2 1/2	0 4 00	0 3	Jan. 1878
12000	Roman Gravel, s, t, Salop	7 10 0	7	6 1/2	7 15 00	0 5	Mar. 1878
812	South Cardon, s, t, St. Cleer	1 50	60	50 60	744 10 00	1 0	Nov. 1878
5128	South Condurrow, s, t, Camborne	6 6 6	11	10 1/2	4 17 00	0 16	Jan. 1879
12000	St. Harmon, s, t, t, t	3 00	3	2 3	0 12 00	0 3	Oct. 1878
10000	So. Fr. Patrick, s, t, s, (8000 sh. issued)	1 00	—	—	0 7 00	0 1	Oct. 1878
4500	South Wh. Frances, s, t, Illogan	7 12 4	7	6 1/2	37 12 00	0 1	Oct. 1878
12000	Tankerville, s, t, Salop	6 00	2 1/2	2 1/2	4 17 00	0 5	Dec. 1878
5000	Tinroft, s, t, Pool, Illogan	11 10 0	8 1/2	7 1/2	80 8 00	0 5	May 1877
15000	Van, s, t, Llanidloes	4 00	17 1/2	16 17	23 10 00	0 5	Jan. 1879
5000	W. Chiverton, s, t, Penryn	12 10 0	3 1/2	3 1/2	55 10 00	0 10	Feb. 1878
1788	West Fildes, s, t, Day	11 00	—	—	1 19 00	0 1	Oct. 1878
512	West Fildes, s, t, Redruth	95 10 0	37	24 36	32 0 00	0 1	Oct. 1878
2048	West Wh. Frances, s, t, Illogan	28 16 3	3	2 1/2	3 12 00	0 3	Oct. 1878
600	West Wh. Frances, s, t, Illogan	49 0 0	9	8 8	446 0 00	0 15	Apr. 1878
12000	West Wye Valley, s, t, t, t	18 00	2 1/2	1 1/2	0 12 00	0 3	Nov. 1877
1024	Wh. Eliza Consols, s, t, St. Austell	18 00	—	—	19 10 00	0 10	Oct. 1878
2048	Wh. Eliza Consols, s, t, St. Austell	5 13 10	3 1/2	3 1/2	8 5 00	0 8	Oct. 1878
4296	Wh. Eliza Consols, s, t, St. Austell	5 4 6	1 1/2	1 1/2	0 8 00	0 8	Oct. 1878
26300	Wh. Eliza Consols, s, t, St. Austell	1 00	—	—	11 19 00	0 2	Oct. 1878
80	Wh. Eliza Consols, s, t, St. Austell	173 15 0	—	—	0 22 10 00	0 4	Oct. 1878
3000	Wh. Eliza Consols, s, t, St. Austell	7 11 0	6 1/2	6 1/2	0 15 00	0 5	Oct. 1878
6000	Wh. Eliza Consols, s, t, St. Austell	0 8 0	—	—	0 4 00	0 1	Oct. 1878
10000	Wye Valley, s, t, Montgomery	3 00	2	1 1/2	0 10 00	0 4	Oct. 1878

## FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Div.	Clos. pr.	Total divs.	Per sh.	Last Div.
35500	Alamillos, s, t, Spain	2 00	1 1/2	1 1/2	1 19 00	0 6	Oct. 1878
80000	Almida and Tinto Consol, s, t	1 00	3 1/2	1 1/2	0 8 00	0 1	May 1878
30000	Australian, s, t, South Australia	7 7 8	1 1/2	1 1/2	1 1 00	0 2	Oct. 1878
10000	Battle Mountain, s, t, (2400 part pd.)	5 00	—	—	0 10 00	0 10	Nov. 1878
15000	Birdseye Creek, s, t, California	4 00	3 1/2	3 1/2	0 14 00	0 2	Dec. 1878
30000	Cape Copper Mining, s, t, s, Africa	7 00	30	29 30	33 6 00	0 17	Dec. 1878
24438	Colar Creek, s, t, California	8 00	3 1/2	3 1/2	0 8 00	0 2	Dec. 1878
50000	Cosena Sul. s, t, Romagna, Italy	10 00	—	—	0 18 00	0 2	Aug. 1878
15000	Chicago, s, t, t, t	10 00	1 1/2	1 1/2	2 8 00	0 4	Nov. 1878
65000	Colorado United, s, t, Colorado	10 00	1 1/2	1 1/2	0 18 00	0 4	Nov. 1878
10000	Copiapu, s, t, Chile (250 shares)	18 15 0	1 1/2	1 1/2	0 18 00	0 4	Nov. 1878
100000	Don Pedro North del Rey	0 18 0	—	—	7 11 00	0 3	Mar. 1878
23500	Eborhardt and Aurora, s, t, Nevada	10 00	3 1/2	3 1/2	3 8 00	0 2	Mar. 1878
70000	English and Australian, s, t, B. Aust.	2 10 0	3 1/2	3 1/2	1 8 00	0 3	Oct. 1878
80000	Flagstaff, s, t, Utah	10 00	1 1/2	1 1/2	2 15 00	0 3	Dec. 1877
25000	Flint, s, t, Utah	2 00	1 1/2	1 1/2	4 20 00	0 1	Oct. 1878
50000	Frontino and Bolivia, s, t, New Gran.	2 00	2 1/2	2 1/2	7 3 00	0 3	Oct. 1878
5000	Gold Run, s, t, t	1 00	—	—	0 2 00	0 1	Oct. 1878
80000	Kapunda Mining Co. Australia	1 30	—	—	0 3 40	0 4	Oct. 1878
20000	Las Chancas, s, t, Utah	5 00	3 1/2	3 1/2	0 14 00	0 2	July 1878
15000	Linares, s, t, Spain	3 00	4 1/2	3 1/2	17 10 40	0 2	Oct. 1878
50000	London and California, s, t	2 00	—	—	0 1 00	0 1	Oct. 1878
7587	Llanos, s, t, Portugal (25 sh.)	3 10 0	—	—	0 1 00	0 1	Oct. 1878
5000	Mammoth Copperopolis of Utah, s, t	10 00	—	—	0 11 00	0 1	Mar. 1878
5000	Mountain Chief, s, t, Utah	5 00	—	—	0 8 00	0 8	Dec. 1878
10000	Pontgibaud, s, t, France	10 00	—	—	26 19 00	0 4	Jan. 1878
100000	Port Phillip, s, t, t, t	1 00	25	22 24	1 12 00	0 1	Mar. 1879
54000	Richmond Consols, s, t, Nevada	5 00	10 1/2	9 1/2	6 11 00	0 10	Nov. 1878
40000	Santa Barbara, s, t, t, t	0 10 0	1 1/2	1 1/2	0 5 00	0 1	Nov. 1878
120000	Scottish Australian Mining Co., s, t	1 00	1 1/2	1 1/2	0 5 00	0 1	Nov. 1878
125000	Sierra Buttes, s, t, California	0 10 0	—	—	16 per cent.	—	Nov. 1878
140625	S. B. Plumas Eureka, s, t, t	2 00	1 1/2	1 1/2	1 19 00	0 1	Nov. 1878
60000	South Aurora, s, t, Nevada	5 00	3 1/2	2 1/2	2 10 00	0 1	Oct. 1878
235000	St. John del Rey (25 stock & multiples dealt in)	5 00	—	—	0 14 20	0 2	Nov. 1878
20000	Tolima, s, t, s, America	8 00	—	—	yearly 15 p. cent. for Dec. 1878	—	—
25000	Victoria (London), s, t, Australia	1 00	—	—	0 11 00	0 6	May 1878
15000	Western Andes, s, t, New Granada	8 00	—	—	0 12 00	0 7	Jan. 1878
21000	W. Prussian (5000 pref. sh. 10f. pd.)	10 00	10 1/2	10 1/2	0 10 00	0 4	Jan. 1879

## NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Div.	Clos. pr.	Total divs.	Per sh.	Last Div.
12000	Argentine, s, t, Argentine Republic	8 00	—	—	—	—	—
3000	Bellavista, s, t, Peru (210 shares)	10 00	—	—	—	—	—
10000	Blue Tent, s, t, California	5 00	—	—	—	—	—
10000	Buena Ventura, s, t, t, t	5 00	—	—	—	—	—
49355	Chontales, s, t, Nicaragua	0 50	—	—	—	—	—
18000	Condes de Chili, s, t, t	2 00	—	—	—	—	—
70000	English Australis, s, t, Victoria	1 00	—	—	—	—	—
35000	Excelsior Hydraulic Gold Washing Co., California	6 00	—	—	—	—	—
10000	Exchequer, s, t, California	1 00	—	—	—	—	—
40000	Holcombe Valley, s, t, California	1 00	—	—	—	—	—
8000	Hornachos, s, t, s, Spain	10 00	—	—	—	—	—
12000	Hualfah, s, t, t, Orebro, Sweden	10 00	—	—	—	—	—
12000	Hunter Consolidated, s, t, Utah	10 00	—	—	—	—	—
20000	Imperial Brazilian Collieries, Brazil	5 00	—	—	—	—	—
7500	Isabelle, s, t, California (250 shares)	5 00	—	—	—	—	—
100000	L. X. L., s, t, California	5 00	—	—	—	—	—
50000	Javali, s, t, Nicaragua	1 00	—	—	—	—	—
3500	La Mancha, s, t, Newfoundland	10 00	—	—	—	—	—
12000	Llanos, s, t, t, t, t	1 10 0	—	—	—	—	—
75000	Malabar, s, t, Colombia (2100 shares)	1 00	—	—	—	—	—
40000	Malpaso, s, t, Colombia (7400 pref. shares, fully paid)	1 00	—	—	—	—	—
12000	Menzenberg, s, t, t, t	5 00	—	—	—	—	—
4588	New Bensberg, s, t, Germany	5 00	—	—	—	—	—
60000	New Quebrada, s, t, Venezuela	5 00	—	—	—	—	—
20000	New Zealand Kapanga, s, t, t, t	5 00	—	—	—	—	—
30000	Onegui, s, t, Oregon (U.S. preference shares)	5 00	—	—	—	—	—
50000	Panalello, s, t, Chile (25000 debentures)	4 00	—	—	—	—	—
90000	Pastorena United, s, t, Italy	4 00	—	—	—	—	—
25000	Pitangu, s, t, Brazil (6000 sh. 21 fully paid)	3 00	—	—	—	—	—
25000	Placerias, s, t, California	0 50	—	—	—	—	—
50000	Providencia and New Rosario, s, t, Mexico	2 00	—	—	—	—	—
40000	Ravenscroft, s, t, New Zealand	1 00	—	—	—	—	—
5000	Rica, s, t, Colombia (40000 issued)	0 50	—	—	—	—	—
22,141,000	Rio Tinto, s, t, t, t, t	1 00	—	—	—	—	—
50000	Rosa Grande, s, t, Brazil (21 shares)	Stock	—	—	—	—	—
30040	Russia Copper, Oregon and Utah	1 00	—	—	—	—	—
10000	Silver Pluma, s, t, Colorado	10 00	—	—	—	—	—
50000	Tecoma, s, t, Utah	1 00	—	—	—	—	—
43174	United Mexican, s, t, Mexico	10 00	—	—	—	—	—
14000	Utah, s, t, t, t	29 0 3	—	—	—	—	—
50000	Virneberg, s, t, Rheinbreitbach, Germany	5 00	—	—	—	—	—
15000	Yorke Peninsula, s, t, South Australia	2 00	—	—	—	—	—
54500	Yorke Peninsula, s, t, South Australia Preference	1 00	—	—	—	—	—

Have made calls since last dividend was paid.

## FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

Shares.	Mines.	Paid.
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